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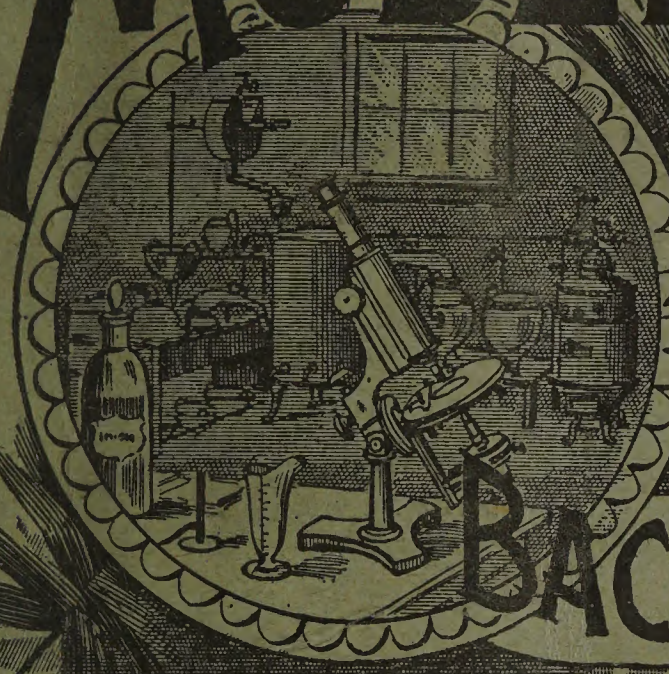
MODERN MEDICINE AND BACTERIOLOGICAL REVIEW.



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SANITARIUM, BATTLE CREEK, MICH.

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a m	p m	p m				p m	p m	p m		a m
9.00	3.02	8.15	a m	.....	.....D. Chicago A.....	6.30	2.00	9.10	.....	6.30
11.25	4.50	10.30	6.00	.....	.....Valparaiso.....	4.10	12.05	7.20	.....	4.30
p m										
1.10	6.15	12.00	10.05	.....	.....South Bend.....	2.35	10.40	5.55	.....	3.07
1.55	6.55	12.45	12.40	.....	.....Cassopolis.....	1.55	10.05	5.20	.....	2.25
2.40	.....	†1.33	3.42	.....	.....Schoolcraft.....	1.10	.....	.....	.....	.....
2.50	7.40	1.48	4.30	a m	.....Vicksburg.....	1.00	9.20	.....	p m	1.30
3.35	8.15	2.40	6.20	7.00	.....Battle Creek.....	12.15	8.35	4.00	9.35	12.50
4.42	9.03	3.25	.....	7.47	.....Charlotte.....	11.14	7.53	3.19	8.40	11.55
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6.30	10.23	5.03	.....	9.30	.....Durand.....	9.35	6.36	2.10	6.50	10.23
7.30	10.50	5.40	.....	10.05	.....Flint.....	8.35	6.10	1.45	5.47	9.40
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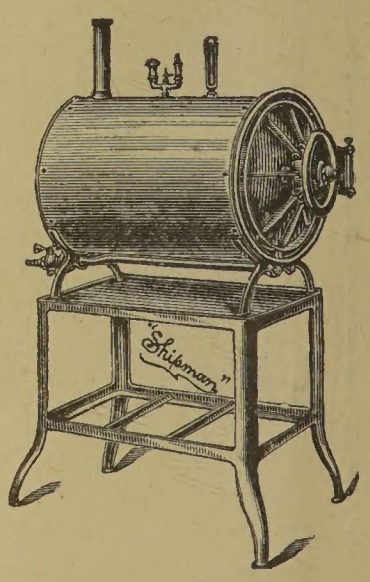

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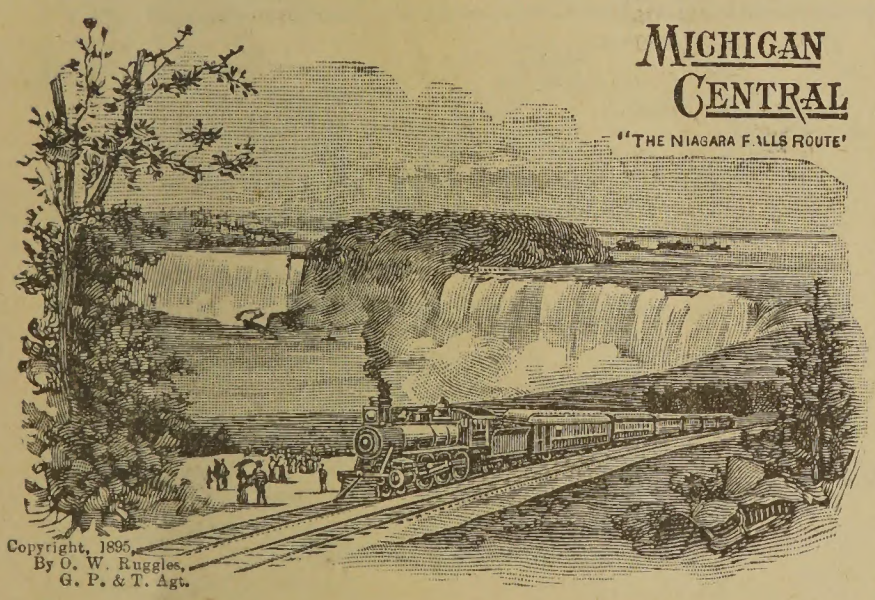

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BACTERIOLOGICAL REVIEW.

VOL. V. BATTLE CREEK, MICH., U. S. A., DECEMBER, 1896. NO. 12.

ORIGINAL ARTICLES.

THE NON-MEDICINAL TREATMENT OF INSOMNIA.

BY W. H. RILEY, M. D.,

Superintendent of the Colorado Sanitarium, Boulder, Colo., Member of the American Medical Association, the American Neurological Association, etc., etc.

INSOMNIA is a condition in which the individual suffers from too little or imperfect sleep, or from its entire absence for a longer or shorter time. As sleep is a function, insomnia cannot be regarded as a disease, but simply as a disorder, or symptom. It often appears as a troublesome symptom in organic diseases of the heart, blood-vessels, kidneys, brain, etc. Space, however, will not allow a detailed consideration of the subject in all its relations to these organic diseases; the remarks in this article will therefore be mainly directed to insomnia as a disordered function, without reference to its relations to gross organic diseases.

Insomnia is usually accompanied by other manifestations of a morbid condition, prominent among which may be mentioned nerve weakness and excessive nerve irritability. It is a disorder quite as difficult to manage and quite as trying to the general practitioner as any with which he has to deal; and judging from the number of hypnotics and sleep-producing remedies which are constantly brought to his notice in the advertising pages of the medical journals, his task in this direction is not at all diminishing. The increasing number of these sleep-producing drugs which are offered to the public also suggests the importance of a knowledge of how to preserve normal sleep, and of how to relieve sleeplessness, if possible, by the use of more simple and less harmful remedies.

Americans have already gained for themselves the reputation of being a nation of dyspeptics; they are fast becoming a nation of poor sleepers. Indeed, dyspepsia and insomnia are quite commonly associated in the same individual.

As sleep is the result of, or at least is attended by, those changes in the functions of the body which we have learned to call physiological rhythms, it may be proper here to divert slightly to a brief mention of physiological rhythms.

Physiological Rhythms.— From the fertilization of the ovum until somatic death, the body is the seat of ever-changing activity. Many of these changes of function take place in the form of waves —a period of activity followed by a period of less activity or complete rest. These alternations of activity and rest, or exacerbation and remission of function, form the physiological rhythms which are present in all, or at least nearly all, the functions of higher animal life. They are the ebb and flow, as it were, of the stream of life; yet it is only now and then that this ceaseless flux engages our attention sufficiently to rise into consciousness, and reveal to ourselves our own changeableness.

These physiological rhythms appear in cycles of time, of greater or less duration, the greatest of them being the period of growth which begins with the fertilization of the ovum and ends at maturity. Some of these rhythms appear within the cycle of a year, depending for their appearance upon the changes of the seasons; others occur monthly; and again others in periods of less duration, by far the greater number showing themselves within a cycle of twenty-four hours.

These rhythms may be regarded as natural and physiological habits which have been established mostly as the result of external conditions and forces

acting upon the organism. And as physiological habits, they are fundamental, and consequently can be changed only with difficulty, and by altering the conditions which have led to their establishment.

The most conspicuous, and I might say the most important, rhythm that appears within twenty-four hours is that of activity alternating with rest,— wakefulness and consciousness followed by sleep and unconsciousness.

In order better to understand the conditions with which we have to deal in the treatment of insomnia, it may be well to consider briefly : —

1. Some of the natural causes or conditions that produce normal sleep.

2. The changes in the functions of the body during sleep.

3. The most common causes of insomnia.

4. Some of the remedies which have proved efficient in the treatment of a large number of cases of chronic insomnia.

Let us consider the first of these subheads ; viz., *some of the natural causes or conditions conducive to normal sleep.*

Normal sleep is a condition of the body with which every one is, of necessity, and by actual experience, acquainted. Yet the causes and phenomena of sleep are questions with which physiologists and philosophers have wrestled for ages, and which even at the present time are not fully understood.

Nearly all animals with highly developed nervous systems must, night after night, or day after day, or at least time after time, lay themselves down to sleep.

The causes of sleep, or at least the preliminaries to sleep, may be considered under the following heads : —

(1) Fatigue of the nervous system.

(2) Changes in the conditions of the blood.

(3) A cessation, or reduction to a minimum, of all stimuli acting upon the nervous system.

(4) An exhaustion, or tiring, of the attention.

One of the most conspicuous and characteristic properties of nerve-tissue is its irritability, or its capability of responding to stimuli which may be applied to it. It is this property of the nerve-tissue that puts man in functional relation to the outside world, and without this relation his existence would be impossible ; for if all the various stimuli that are constantly acting on his nervous system were entirely withdrawn, there would be nothing to keep the machinery of the body in motion, and he would soon cease to exist.

Modern scientific investigation is rapidly disproving the older doctrine of automaticity and spontaneity of action. What may appear to be either automatic or a free act of the "will," if closely studied, will be found to be simply the result of forces and stimuli which have previously made their impression upon the sensitive nervous system ; and these stimuli, starting nerve-currents which travel in the nerve-fiber toward the center of the body, are, in their passage from one nerve-cell to another, often modified, and perhaps inhibited, but finally show their effects upon the nervous system in changes in the various functions of the body.

We may say without departing far from the truth, that every nerve-current that passes centripetally into the nervous system will, sooner or later, return, passing centrifugally outward from the nerve-centers in some form as an outgoing nerve-current which may cause a muscle to contract or a gland to secrete ; or again, which may modify in some way the action of the heart, etc. And so the functions of the different organs of the body are modified and changed by the action of the various stimuli which are constantly playing upon the nervous system. The nervous system is thus the medium of union between the body and the outside world. Most changes in the external conditions that in any way affect the functions of the body must do so by first acting upon the sensitive nervous system.

Physiologically the nervous system of man and also that of the higher animals may be regarded as made up of three classes of nerve-cells : Afferent cells, over whose neuron (nerve-cylinder) the incoming nerve-current arrives at the nerve-center ; efferent cells, which furnish paths for the outgoing nerve-currents ; and between these two, central cells which distribute the current to different parts of the nervous system, and form the connecting link between the afferent and the efferent nerve-cells. In man the number of these central cells is large, and the arrangement complicated ; in the lower animals they are fewer, and sometimes

absent. This anatomical difference between the nervous system of man and that of the lower animals offers one explanation, at least, for the physiological difference which is so often strikingly apparent.

In the lower animals, in which the nervous system is simple, a nerve-current passing inward along an afferent nerve is soon reflected outward to a muscle or gland, without traveling over a central cell at all, or at least its course through central cells is short and simple; and sometimes, as in the case of the hydra or medusa, a single bipolar sensory cell affords the only path over which the nerve-current may pass from beginning to end.

But in man, where there are numerous central cells interpolated between the afferent on the one hand and the efferent on the other, the paths afforded to the incoming nerve-current are numerous, and consequently the reaction is more complicated, and often very much delayed.

As the result of response to stimuli of one kind or another, energy is liberated from the nerve-cell, and there is a change in its material composition. If a nerve-cell is stimulated mechanically, chemically, or electrically, the activity in the cell produced by such stimulation is attended with a rise of temperature, electrical variations in the nerve-cell and fiber, and the production of acid, all of which mean that energy has been set free. The passage of the nerve-current through the nerve-cell is itself a form of energy which previous to its passage was stored up in the nerve-cell as chemical potential energy, but during the discharge of the cell is transformed into kinetic energy, and liberated as a nerve-current. This discharge of energy from the cell in the form of heat, electric changes, and nerve-currents, and the transformation in the composition of the cell by which the unstable complex molecules are broken down into more stable and simpler ones, is, sooner or later, followed by changes in its structure, form, and function.

The changes in the histological appearance of the nerve-cell after prolonged functional activity, or stimulation, for some time, have been worked out by Hodge, Vas, and Mann, in the cat, dog, sparrow, and honey-bee. The results of the experimentation relating to this question show that after prolonged functional activity, or artificial stimulation of the nerve-cell, the changes in the body of the cell are as follows: —

The size of the cell becomes smaller, and its outline more irregular; the cytoplasm of the cell becomes shrunken, and often vacuolated; the nucleus and nucleoli are smaller and more irregular in outline, and stain more deeply with osmic acid than in the resting cell, while the cytoplasm stains less deeply; and the cells in the sheath which in some cases surrounds the nerve-cells are also smaller and more irregular in the stimulated cell than in the cell at rest.

These changes are illustrated in Fig. 1, where A shows the condition of the cells of the thoracic ganglia of the cat in a rested condition, and B the shape, form, and appearance of cells and nuclei after being stimulated for a period of five hours. During this interval of five hours, the nerve-cells were stimulated by electricity for fifteen minutes, and allowed to rest for forty-five minutes during each hour. The appearance of the cells at the end of these five hours is shown in B (Hodge). Hodge has shown that the above-described changes also obtain in the nerve-cell as the result of functional activity.

Such are the changes produced in the lower animals — the cat, the dog, etc. — as the result of functional activity and artificial stimulation. And although these changes have not been so clearly demonstrated in man, they are sufficiently well proved to make them applicable to him.

There are also changes in the function of the cell as the result of prolonged activity. These may be briefly mentioned as follows: The nerve-cell is less irritable, consequently responds less readily to various stimuli that may act upon it; the nerve-currents which are generated within it are weaker and less rapid in their transit; it can be readily demonstrated that the reaction time of various stimuli, such as heat, cold, light, touch, and sound, at certain periods of the twenty-four hours, when one is tired and the nerve-cells fatigued, is much greater than it is in the early part of the day, when one is refreshed by a good night's sleep, and when the nerve-cells are fully charged with energy and new matter.

In the morning, then, after a night of sufficient and normal sleep, the nerve-cell

is well stored with new matter arranged in the form of complex, unstable molecules, and recharged with chemical potential energy, which, whenever the cell is stimulated, is readily transformed and liberated in the form of heat, electricity, and nerve-currents.

As the result of continued stimulation through the day, the cell runs down, as it were, the complex molecules being broken

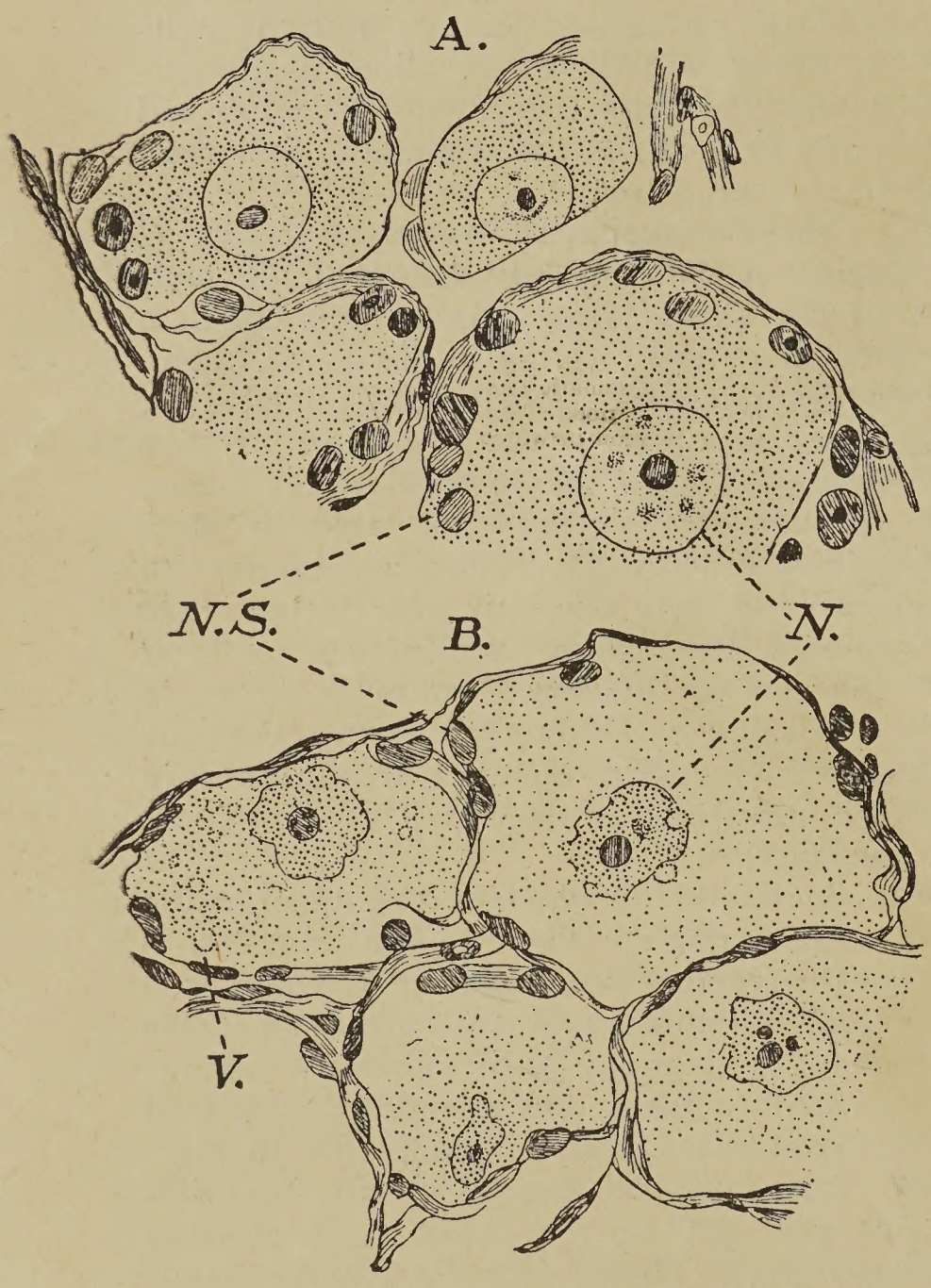

FIG. 1.— Two sections, A and B, from the thoracic spinal ganglion of the cat. B, from the ganglion which had been electrically stimulated through its nerve for five hours. A, corresponding resting ganglion. The shrinkage of the structure connected with the stimulated cells is the most marked general change. N, nuclei. N. S., nucleus of the capsule. V, vacuole. Magnified 500 diameters.— *Hodge*.

down into simpler and more stable ones; and the potential energy which is stored up in the cell is liberated and discharged in the form of nerve-currents, until at night, after a day of activity, the cell is exhausted, and must have a period of rest in which to store up new material, and recharge itself with new energy.

But within the twenty-four hours, and during the course of the running-down process. the nerve-cell may show signs of fatigue which are more conspicuous at certain intervals than at others, and therefore appear in the form of waves. The curve of fatigue attending continuous voluntary muscular contraction illustrates this fact: —

If a weight is repeatedly raised by the flexion of the forefinger, in a short time the distance through which the weight is raised becomes less and less, until there will come a time when the greatest voluntary effort will fail to raise the weight; but if the effort is continued, despite the fact that the weight does not move, the muscular contraction will finally reappear, and in a short time the weight can be raised to nearly its maximum height.

On the other hand, if a muscle is made to contract by stimulation with electricity, and without any voluntary effort, the distance through which a weight will be raised in consequence of the muscular contraction produced by the electrical stimulation is the greatest at first, and in a short time becomes less and less, and continues to decrease without any periods of returning activity until no response to electrical stimulation appears at all, and the distance through which the weight passes is not appreciable.

There is evidently a difference in the curve of fatigue produced by voluntary effort, and that produced by electrical stimulation. The waves of fatigue which appear in curves of voluntary muscular contraction indicate that at certain times weak nerve-currents are sent out from the nerve-cell as the result of its partial exhaustion.

Fig. 2 illustrates the curve produced by continuous voluntary muscular effort, and that produced by electrical stimulation of the muscle, and also shows the difference between the effect of these two forms of stimuli. The light, long lines are those for voluntary contractions; the heavy lines those for contraction following the direct stimulation of the flexor muscles by electricity; in the former there are periods, in the latter, none.

But the running-down, or discharge, of the nerve-cell, is not the only element that causes fatigue of the nervous system. This condition is hastened by the accumulation in the blood of waste products of cell activity. These substances are not eliminated as fast as they are formed in the tissues, and their retention in the blood lessens the irritability of nerve-tissue, and hastens fatigue.

Mosso found that fatigue could readily be produced in a dog at rest by injecting into his vessels blood from another dog that had been wearied by prolonged activity. Waste products that are thus produced by cell activity are not only toxic to the cells that produce them, but to other tissue with which they may be brought into contact by the circulation. Thus the waste products resulting from muscular activity may, when brought to the nerve-centers of the body, produce fatigue by their toxic influence on the nerve-cell; and our own experience tells us that the sensation of fatigue produced by mental effort is entirely different from that caused by muscular work.

The fewer the stimuli that act upon the nervous system, the more readily is sleep induced. At night, therefore, when the nervous system is fatigued, and the irritability of the nerve-cell is greatly diminished as the result of the day's activity, and when the stimulating influences of the day are largely withdrawn from the body, and the forces of nature are less active, the conditions are most favorable for sleep. It is then that we naturally withdraw from the outside world, and retire to the seclusion and quietness of our chamber for sleep. Experience tells us that we sleep better in the darkness and silence of night than in the presence of noise and light, which act as irritants to the nervous system.

Strumpbell reports an interesting case of a lad of low intelligence whose avenues of communication with the outside world had been reduced by disease to one eye and one ear. This lad could be put to sleep at will by plugging the one ear and closing the one eye.

But fatigue of the nervous system, changes in the composition of the blood, and the reduction to a minimum of the stimuli which act upon the nervous system,—conditions which we have thus far considered as causes or preliminaries to sleep,—are not always sufficient to change one from wakefulness and consciousness, to sleep and unconsciousness.

One of the necessary preliminaries to sleep is a tiring of the attention. In our usual experience of passing from wakefulness to sleep this tiring of attention occurs unconsciously. The mental images grow dimmer and dimmer; thought flows slower and slower; the attention becomes weaker and weaker, and finally is exhausted, and we pass into sleep and unconsciousness.

The tiring of attention is closely related to fatigue of the nervous system, and a reduction of the stimuli that act upon the nervous system, though this tiring of attention is not entirely dependent upon these conditions. Instances are not uncommon in which there is extreme fatigue of the nervous system, and yet the individual cannot sleep. In these cases the attention is usually active, and is the principal factor that keeps the individual awake. One of the surest ways of producing sleep is by tiring the attention, and this may often be accomplished by counting, reading dull and heavy books, listening to monotonous sounds, or keeping before the mind heavy blank verse.

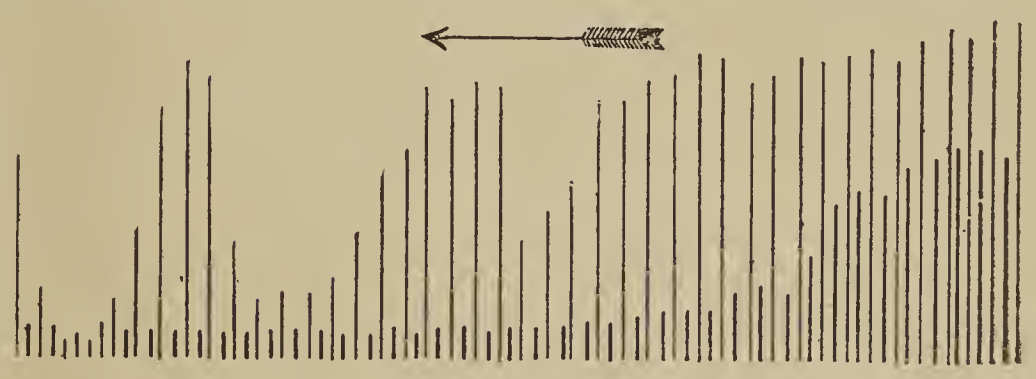

FIG. 2 represents the record of the flexions of the forefinger. The light lines are those for the voluntary contractions; the heavy lines, for those contractions following the direct stimulation of the flexor muscles by electricity. In the former there are periods of extreme fatigue; in the latter, none. The arrow shows the direction in which the curve is to be read.—*Lombard.*

(To be continued.)

PUBLIC TURKISH BATHS NEEDED.*

BY CHAS. H. SHEPARD, M. D.,
Brooklyn, N. Y.

THE action of the New York Board of Health in appropriating thirty thousand dollars for furthering the use of antitoxin in the treatment of diphtheria, encourages the hope that in the near future the public mind may be quickened to recognize its opportunities and its necessities in other and broader fields. It is time to appreciate the fact that we are our brother's keeper, and that whatever works harm to him reacts upon ourselves. This action of the board of health also indicates

*Read in the Section on State Medicine, at the Forty-seventh annual meeting of the American Medical Association, held at Atlanta, Ga., May 5–8, 1896.

a growth in public sentiment that will encourage and sustain important measures for the public welfare. It is a moral duty as well as a principle of public polity, in all civilized countries, to protect the people from the invasion of infectious disease, and it would be very short-sighted to stop at mere infection. The use of antitoxin is only to supply a temporal exigency. It does not purify the homes of the people, or teach them to take better care of their bodies, or to make their surroundings more sanitary. Something is needed to uproot the cause of the disease; and when this is secured, it will be found that many other diseases have disappeared.

The Romans understood and perfected public sanitary works on a most stupendous scale, as is witnessed by their aqueducts for bringing pure water into the city of Rome. Some of them are in use at the present time, and the magnificent ruins of others are still standing.

In India, the home of the cholera, the city of Calcutta is now protected from epidemics of that fearful scourge by the supply of comparatively pure water, which has recently been furnished the city.

When the community can be assured of pure water to drink and pure food to eat, with proper bathing facilities, the enjoyment of life will be much enhanced and its length prolonged.

In a recent report of the Committee on National Quarantine of the New York Academy of Medicine, it was stated that "the most certain protection of this or any other country against the ravages of infectious disease lies in the practise of internal sanitation."

What is true of the state is also true of the individual. The more cleanly a man's habits, and the purer his food and drink, the less liable he is to disease, because his body is thereby rendered naturally immune to disease. Whatever our theories as to prophylactic measures in the prevention of disease, the production of a barren soil for the growth and development of pathogenic germs is of greater importance than the destruction of the germs themselves, though no effort should be spared for the elimination of all diseases. Various theories have been offered by different authorities concerning the processes and changes that take place in the body in consequence of artificial immunization, but the scientific controversy regarding it has not yet been settled. Suffice it to say, that the more pure and active the fluids of the normal living body, the more powerful are the bactericidal properties thereof.

There is at present a revival of a favorite practise of the ancients, and that is their system of bathing. The old Roman baths, which were identical with the Turkish baths of the present day, were prominent features of the daily life of the Romans, and so continued during their period of greatest prosperity. They were then carried to a scale of perfection never surpassed. The baths of Diocletian, which were the largest ever built in the world, were capable of accommodating eighteen thousand bathers at one time.

I have heretofore maintained, and would reiterate, that as one of the greatest sanitary necessities of the day, it is most desirable that large public Turkish baths, as a preventive of disease, should be established in all our cities at public expense, placed under medical supervision, with admission at nominal rates, so that the poorest individual may partake of their advantages with a feeling of self-respect in paying something for the help and comfort to be derived therefrom. They should be made attractive, and thus draw people from demoralizing enjoyments. This would react on the social life of the community, and by purifying the people would purify their homes.

We support public schools, and compel our children to attend them. With more propriety might we furnish public Turkish baths, and insist that every man, woman, and child shall avail himself of this luxury at least once a week. The physical is of greater importance than the mental; indeed, it is of the first importance to the state.

Herein would wealth have a royal opportunity to consecrate itself to the service of mankind. The endowment of public baths was among the most noble actions of the Roman emperors. Eight hundred of these institutions adorned the capital of the empire, and they supplied, during many eventful years, almost the only medicine to a people distinguished for their corporeal and mental vigor.

Among the important results that are brought about by the use of the Turkish bath may be mentioned: (1) A perfect cleansing of the external body, and relief from any undesirable odor, replacing

therefor the beauty and fragrance of health; (2) a purification of the blood by the elimination of its impurities through the surface of the body; (3) an equalization of the circulation and perfect distribution to and through every organ and tissue of the body, however remote; (4) the speedy elimination of blood poison; (5) increased nutritive changes throughout the whole body; (6) a relaxation by heat of the tissues of the body, and thereby relief of congestion, whether located in the lungs, bowels, or other organs of the body, or in the muscular tissues, as shown in the relief from rheumatism, malaria, etc.; (7) absorption of exudates and inflammatory products; (8) better ventilation of the lungs, and the placing of climatic treatment on a scientific basis; (9) greater activity of the secretions and excretions; (10) the prevention and eradication of the predisposition to disease; (11) the strengthening of every vital organ, and therefore an increase of vital capacity.

The arguments in favor of public Turkish baths are both manifold and important. To enumerate a few of them: —

They would be comparatively inexpensive.

They would lessen the cost of medication.

They would prevent the spread of epidemics.

They would render extinct many classes of disease.

They would lessen the demand for stimulants of every kind, and render the police force less necessary.

They would be more powerful than any law of prohibition, because they would be more attractive than the saloons.

They would reduce the expenses of hospitals and asylums.

They would shorten the time necessary for patients to remain in such institutions.

They would reduce the demand for hospitals, so that what are already built would be sufficient for a generation to come.

They would help toward the refinement of the community.

They would vastly prolong the average life of the people.

They would add to the enjoyment of life, by making everybody healthier and happier.

They would tend to render the cities that adopted the bath pre-eminent among all the cities of the world, and make them an example for all other cities to follow.

They would redound to the honor, and conduce to the growth, of such cities, and continually increase the numbers of the better element of their citizens.

They would uplift the community, and tend to develop a superior race of mankind, as handsome as were the Greek models, and as powerful as ever were the Romans.

To the individual the Turkish bath is the perfection of sanitary science, and to the nation it is the coming blessing.

These few reasons but imperfectly state the great need and many advantages that would accrue to the community adopting the practise of public Turkish baths.

[During the discussion which followed this paper, Dr. J. H. Kellogg made the following remarks: —]

This subject is one of very great importance. I am sure that there is nothing more valuable as a health measure than public baths. In different parts of Europe I have noticed that wherever there are public baths, the cities possess a superior class of people. On the streets of Stockholm I saw more fine looking men, stalwart and ruddy-faced, than in any other city of Europe. There a bath can be had for five cents, or less; and for twenty-five to fifty cents, a better bath. There are different grades, so that all classes are accommodated. Connected with these baths are laundries also, where the poor people may go to wash their clothing.

Three years ago I attempted some missionary work in the way of establishing free baths in the city of Chicago. I found a place and fitted it up. There was a gospel mission next door. I asked the superintendent of the mission what he thought of the idea. He did not think it amounted to much, but I nevertheless determined to proceed with it. There was but one place in the city where a man could get a bath without paying for it, and that was in the lake — and there is a law against that.

Two or three weeks afterward this same gentleman came to me and said that he wanted to shake my hand; that the baths had changed the complexion of both the people and the community. The baths were patronized by men who were so black you could not tell to what race they belonged. I was astonished to

find how anxious the lower classes were to be clean.

One December morning, when the temperature was a little below zero, I saw one hundred and eighty men in line, the nearest one against the door, waiting to wash their bodies and clothes. There was not a man who had an overcoat or gloves. Their collars were turned up, and they were shivering in the cold. They had been there since six o'clock in the morning. It was really a pathetic sight. It is the rule to find a line like that there now every morning. Sometimes there are two hundred men standing in line waiting for a chance to get clean. I am glad to report that the city authorities, a year or two later, established, as a memorial of the late mayor, the Carter Harrison Free Baths.

I remember once hearing an anecdote at the expense of Spain. An Englishman was traveling in Spain, and going to a hotel, called for a bath. The proprietor was astonished; he could not seem to understand what was wanted. Finally the traveler learned that his host did not possess such a thing as a tub. After considerable delay, he brought two large butcher's trays, and the traveler was enabled to take his bath, presenting the appearance of a miniature Colossus of Rhodes. The result was that the water leaked through the floor upon the people below, and the proprietor ejected the gentleman from his hotel, declaring he would never have an Englishman in his house again, for they were so dirty they had to take a bath every day.

I think what is called "bogus Christianity" is chargeable with the degeneration of the public bath. One of the first things the Christians did in Rome was to tear down the baths and convert them into unnecessary churches. You will scarcely find in Rome at the present time such a thing as a public bath, only two or three floating arrangements; but there are several hundred churches, many more than are needed, which have been built almost entirely from the ruins of public baths. What this country needs is the promulgation of the gospel of health, and I do not know of anything more conducive to purity of life than ample facilities for personal cleanliness. The Turkish bath is certainly one of the best means by which cleanliness may be encouraged.

ACTIVE AND PASSIVE EXERCISES ADAPTED TO DIFFERENT FORMS OF SPINAL CURVATURE.

BY J. H. KELLOGG, M. D.

(Supplementary to "Scoliosis," by Dr. T. J. Hartelius.)

I HAVE arranged and employed for a number of years, with excellent results, the following series of exercises in the treatment of curable forms of spinal curvature. In addition to the various Swedish exercises employed, I find it advantageous to have the patient practise daily a series of movements with the elastic-weight exercise apparatus.

PASSIVE EXERCISE FOR PERSONS SUFFERING FROM SCOLIOSIS.

1. Lying on back, arms-sideways-raising; deep breathing, six to ten times.
2. Friction, one minute; kneading, two minutes; percussion, one minute (tapping, hacking, spatting).
3. Prone-lying, tips of fingers touching at the vertex.

Massage to the Back.— The patient lies upon the face, the forehead resting upon the crossed hands, the elbows well raised from the sides so as to spread the scapulæ, with the back uncovered: —

1. Centripetal friction.
2. Fulling of the neck, shoulders, sides, and loins.
3. Friction — circular, centripetal.
4. Deep kneading — palmar kneading or rolling, above the scapulæ, digital kneading, following the ribs; palmar kneading up and down the spine; digital kneading of the spine.
5. Nerve compression; spine stretching.
6. Percussion of spine and sacrum — tapping, hacking, slapping, beating, clapping.
7. Friction (alternating with kneading as above).
8. Stroking.

GENERAL EXERCISES FOR CASES OF LATERAL CURVATURE.

Head Flexion: —

Standing, head backward flex sixteen times without weight.

Arm exercises with pulley-weights in opposite directions, ten to twenty times; weight, one to five pounds.

Quarter circle with pulley-weights, four to twelve times; weight, one to three pounds.

Rings: —

Drawing body up by the hands four to five times.

Prone-lying, trunk-raising two to six times.

Supine-lying, trunk-raising two to six times.

Supine-lying, legs-raising in alternation, two to six times.

Supine-lying, legs raising together two to six times.

Supine-lying, arms-sideways-raising, breathing, two to six times.

Rowing twelve to sixty times; weight, six to sixteen pounds.

Carrying one- to five-pound weight on head while marching.

Use of crank; pressure, ten to one hundred pounds.

POSTERIOR SPINAL CURVATURE.

1. Arms alternately upward and sideways stretching, with forward bending intermediate, three to fifteen times.

2. Neck-firm, bending to left; pressure on most prominent part of curve, three to twenty times.

3. Arms-upward-stretching, knees-bending, knees-stretching, three to eight times.

4. Prone-lying, head-backward-raising four to twelve times.

5. Arm-circumduction four to twenty-five times.

6. Neck-firm, foot-raising in alternation, six to twenty-four times.

7. Forward to backward lean, forward bending, arms-upward-stretching one to six times.

8. Prone-lying, head-raising four to twelve times.

9. Hanging by hands, head-bending-backward two to eight times.

10. Neck-firm, bending to left, with pressure on curve.

11. Forward-bending, arms-sideways-stretching, palms up, arms-forward-stretching, half-bending, upward-stretching four times.

12. Neck-firm, deep-knee-bending; breathing.

SINGLE LATERAL CURVATURE TO RIGHT.

1. Arms alternately upward and sideways stretch, with forward bend intermediate. Repeat three to fifteen times.

2. Neck-firm, bending to right, pressure on most prominent part of curve. Repeat three to twenty times.

3. Arms-upward-stretch, knee-bend, knee-stretch. Repeat three to eight times.

4. Lying on left side, bend to right one to six times.

5. Arm-circumduction four to twenty-five times.

6. Neck-firm, foot-raising in alternation, six to twenty-four times.

7. Forward-leaning, forward-bending, arms-upward-stretch one to six times.

8. Lying on left side, bend to right.

9. Hanging by hands, bending head backward two to eight times.

10. Neck-firm, bend to right with pressure on curve.

11. Forward-bending, arm-sideways-stretching, palms up, arms-half-bending, forward-stretching, half-bending, upward-stretching. Repeat one to four times.

12. Neck-firm, deep-knee-bending; breathing.

SINGLE LATERAL CURVATURE TO LEFT.

(Right shoulder lower than left.)

1. Arms alternately upward and sideways stretching, with forward-bend intermediate. Repeat three to fifteen times.

2. Neck-firm, bend to left, pressure on most prominent part of curve. Three to fifteen times.

3. Arms-upward-stretching, knee-bending, knee-stretching, three to eight times.

4. Lying on right side, bending to left one to six times.

5. Arm-circumduction four to twenty-five times.

6. Neck-firm, foot-raising in alternation, six to twenty-four times.

7. Forward-leaning, forward-bending, arms-upward-stretching one to six times.

8. Lying on right side, bend to left.

9. Hanging by hands, bend head backward two to eight times.

10. Neck-firm, bend to left, with pressure on curve.

11. Forward bend, arms-sideways-stretch, palms up, arms-half-bend, forward-stretch, half-bend, upward-stretch. Repeat one to four times.

12. Neck-firm, deep-knee-bending breathing.

(To be continued.)

TRANSLATIONS AND ABSTRACTS

[THE articles in this department are prepared expressly for this journal.]

Cancer in Belgium.— The collective investigations on epithelioma in Belgium set on foot by the Société Belge de Chirurgie, has yielded the following results (*La Presse Médicale Belge*, July 19): The details of the 722 cases under treatment or observation on May 15 were received; of these 264 were men, and 458 women. The average age of the men was sixty-five, while that of the women was forty-five. As regards the part attacked, the breast was most frequent (one hundred and eighty-five women and two men); next came the uterus (one hundred and forty-nine, of which one hundred and thirty-three were of the cervix and sixteen of the body); then the lip (one hundred and twenty-five men and three women); the stomach and pylorus (sixty-seven men and fourteen women); the nose (twenty-eight); the rectum (nineteen men, nine women, and one boy aged fourteen); the tongue (seventeen men, three women); the liver (three men, two women); the esophagus (three men, three women); the clitoris (eight); the vulva and vagina (five); the peni and prepuce (three); the intestine (ten); the velum palati (six); the kidney (five men, three women); Fallopian tube and ovary (three). A number of single cases of cancer of the parotid, finger, toe, testicle, axilla, etc., were reported.

As regards recurrence, the observations showed that the younger the patient, the more rapid was the progress of the disease. No relation could be traced between the patient's occupation and the disease. As regards previous illnesses, special attention was directed, in the interrogatories sent out, to phlegmon, puerperal fever, and erysipelas. The following question was also asked, "Is it true that suppurative conditions are hardly ever found in the pathological antecedents of cancerous subjects?" The replies showed that in thirty-six cases there had been phlegmon, whitlow, carbuncle, and suppuration; in twelve, erysipelas; in eleven, scarlet fever; in one, measles and scarlatina. Information on these points was not, however, easy to obtain, and the reporters (Gallet and Deschamps) point out that the hypothesis that suppuration creates a kind of immunity to cancer requires a much larger body of facts than is yet forthcoming to confirm it.

As regards heredity, a history of cancer among progenitors was obtained in sixty-nine of the 722 cases (less than ten per cent.). This small proportion is considered to be of some significance in view of the fact that most of those who replied to the interrogatories were general practitioners in the country, and well acquainted with the ramifications of the family trees of their patients. On the whole, the inquiry led to no conclusion as to heredity or as to the alternation of other diseases, such as tuberculosis with cancer.

As regards etiology, nothing new was elicited; moral influences and injuries were the chief causes assigned. As regards contagion, some practitioners mention the occurrence of two or three cases of cancer in the same house; one refers to the case of a woman who died of cancer after nursing a sister who had cancer of the breast; one relates a case of accidental inoculation. But on this point again the inquiry leads to no conclusion.

As regards treatment, there is no novelty. Medical treatment is unanimously pronounced to be useless; serum treatment finds little support; removal is declared to be the only way of dealing with the disease which offers hope of cure. The general outcome of the interrogatories on this head is that operative treatment may effect a cure, but that, at present, recurrence after operation is far more common than final cure.

Influence of Hot and Tepid Baths upon the Menses.— Matweiff (*Gazette des Hôpitaux*) has demonstrated that saline or mud baths, at 25°, 27,° or 28° C., have a favorable influence on menstruation from the point of view of pain, the quantity of blood lost, and the duration of the flow. Mirouff, who has made a number of investigations with alkaline baths at 27° or 28° C., states that they act as a sedative when taken during the menstrual period. He has found that hot baths taken by patients suffering from affections of the uterine appendages have proved of great benefit, the amount of blood lost is less, and the pain accompanying the inflammatory condition is lessened. These baths, he claims, are of real benefit both between the periods and during the flow.

Epithelial Sowing.— F. von Mangoldt, of Dresden (*La Semaine Médicale*), has reported a new method of skin-grafting to which he has given the name of "epithelial sowing."

The epithelium is obtained by scraping a healthy cutaneous surface. For this purpose the external or internal surface of the arm is considered preferable. The chosen spot is carefully shaved and disinfected, and then with a sharp, sterilized razor, held perpendicularly to the skin, the epidermis is scraped away until the papillary layer is reached. In this way a magma is obtained, composed of epithelial cells and extravasated blood, which is spread upon the surface to be treated, and thoroughly pressed in with a spatula. In case of a fresh wound, the sowing is very simple; but in case of an infected wound, it is necessary to remove the granulations and thoroughly disinfect.

In order to make sure that the epithelial elements adhere closely to the wound, it is advised to scarify it with a small and very sharp bistoury before spreading the scrapings upon it. The spot from which the epithelium has been taken is dusted with dermatol, covered with sterilized gauze, and bandaged. The grafted area is covered with strips of protective plaster, over which an aseptic dressing is placed.

The transplanted area during the days immediately following the operation looks as if covered with a pseudo-membrane; it loses its primitive brick-red color, and becomes yellowish-gray, a change due to coagulation of fibrin. At the fifth or seventh day the fibrin begins to disappear, and the color changes to blush-rose, the first sign of the proliferation of the epidermic elements. Towards the middle or end of the third week the surface is completely covered with epithelium. After the fifth day the dressing is changed every two days, and the wound gently irrigated with a warm, sterile, normal salt solution. After the tenth day the surface is dusted with boric acid.

Arsenic in Cigarettes.— As a result of his preliminary investigations of the analysis of the paper wrappings of smoking tobacco and cigarettes, Dr. William Murrell reports (*British Medical Journal*, July 11, 1896) that he has found that of the seventeen samples of tobacco and cigarette packages examined, arsenic was present in six. The presence of arsenic in the wrappers of cigarettes, he thinks, must be attended with considerable risk to the smoker, for the coloring matter easily rubs off on the fingers, especially when moist, and from the fingers on to the cigarettes. Most packet tobaccoes are put up by machinery, but the papers are spread by girls, who must of necessity in the course of their work absorb a good deal of the arsenic. The danger is both to the consumer and to those engaged in the manufacture of cigarettes, and it is by no means confined to the cheaper brands, as the poisonous substance occurs abundantly in many of the high-priced packet cigarettes.

The Influence of Heat Applied over the Stomach upon Digestion.— M. Pouschine (*Wratch*) has, by experiments upon six healthy persons, definitely determined the following facts respecting the influence of fomentations over the region of the stomach. The general result was to increase digestive activity. The total acidity and quantity of free hydrochloric acid were also increased; while the amount of combined chlorin was diminished. Fermentation was diminished, while the production of peptone was increased, as was also the digestive activity of the gastric juice, together with the motor functions of the stomach. The increased activity of digestion induced by the application of heat was found to persist for several hours, and in some instances for several days.— *New England Medical Monthly.*

A Criminal Family.— In Chester, Eng. (*Medical News*), there recently died a man who had distinguished himself by appearing before the city justices one hundred and thirty times in the capacity of a criminal. His father had been tried thirty-five times, one sister sixty-seven, and another twenty-nine times, making a grand total for the family of two hundred and sixty-one trials. The estimated cost of these trials was ten thousand dollars.

This is only one example of the many cases of inherited criminal propensities, a knowledge of which must extend to the masses before popular opinion will demand that the state shall provide for this class of defectives as it now does for the insane.

Ice-Cream.— The British Institute of Preventive Medicine has dealt a deadly blow to ice-cream. A very exhaustive inquiry regarding the nature and adulterations of this toothsome substance has just been completed by Dr. Mac Fayden and Mr. Collyer, F. I. C. These gentlemen tell us that ice-cream has only 26.5 per cent. of solids, the rest being water; that the solids consist of fats, four per cent.; sugar, twelve per cent.; starch, six per cent.; albuminoids, four per cent.; and mineral matter, one-half per cent.

This all sounds well enough, and would lead the unwary reader to think that ice-cream was all right; but the denouement comes in the results of microscopic research. The microscope shows the presence, in London ice-cream at least, of bedbugs, bugs' legs, fleas, straw, hair, coal-dust, woolen and linen fiber, tobacco, epithelial scales, and muscular tissue. Even the microscopical examination, however, is delectable compared with the results of bacteriological studies. These reveal in street-barrow ice-cream a maximum number of seven million microbes per cubic centimeter, while the ice-cream of the shops has only one million per cubic centimeter. The character of the micro-organisms is extremely mixed. There are the bacteria coli commune, besides spirillæ and putrefactive microbes of various kinds.

We find no account of the chemical analysis, which would perhaps add the final touch to the pathological picture of the ice-creams of the shops. In this country it is known that ice-creams chemically contain a poison known as tyrotoxicon, but in London, it seems, that with the bugs and the microbes and the filth generally, there is no need of further research to prove that the ice-creams of the peddlers and the streets are not fit to eat. It would be a manifest injustice to the ice-cream industry, however, to suppose that the supply which is furnished to the American public is at all comparable to that which has been investigated by the English authorities. — *Medical Record.*

Ancient Antitoxin.— There is nothing new under the sun. Pliny says that Mithridates, king of Pontus, made himself proof against poisons by gradually accustoming himself to them. This he did by taking a mixture, the principal ingredient of which was the blood of the Pontic duck, which was said to live on poisons. Thus the blood of one immune animal was used to make another animal immune.

Epilepsy from the Use of Tobacco. —J. W. Scott, M. D. (*S. W. Med. Rec.*), reports a case of convulsions, epileptiform in character, due to the use of tobacco. For two months the patient had had one or two convulsions a week, and they were growing progressively worse in spite of treatment. With the discontinuance of tobacco the convulsions ceased, and have not returned.

A New Danger in Beef Tea.— According to the *Chemist and Druggist*, a whole family at Ballinasloe, with one exception, were committed to the district lunatic asylum raving mad. The outbreak has been traced to beef tea, of which all the family, save the one mentioned, had partaken the previous day.

The Sweet Pea vs. Flies.— A writer in the *Medical Record* is responsible for the statement that the odor emanating from the flower of the sweet pea is so offensive to flies that it will drive them out of the sick-room, though it is not usually in the slightest degree disagreeable to the patient. It is therefore recommended that sweet peas be placed in quantities in the sick-room during fly-time.

The Gastric Juice in Tabes Dorsalis.— Nuchard and Boret have recently reported some cases of tabes associated with gastric crises, in which they made careful examinations of the gastric juice.

They found great variability in the reaction of the gastric juice, the changes in reaction occurring with great rapidity, so that a patient who had had a hyperacid gastric juice for a week or more would suddenly be found to have a subacid one, and vice versa. From the character and rapidity of these changes they regard it as very difficult to explain the lesion present upon anatomical grounds. The authors are inclined to think that this great variability in reaction may be a valuable diagnostic point in distinguishing gastric crises with hematemesis from wound-ulcer of the stomach.—*Le Progrès Médical, Feb. 15, 1896.*

Hiccough Cured by Traction of the Tongue.— It is stated by Professor Lepine, of Lyons (*La Semaine Médicale*), that he has arrested and cured a case of hiccough of four days' standing by drawing the tongue out, and keeping it outside of the mouth for a few minutes. It has been observed that rhythmic traction of the tongue excites the respiratory center in cases of asphyxia. The question may be asked, How can these tractions inhibit this center? Professor Lepine, by some experiments, has shown that the result of excitation depends, in great part, on the state of the nervous apparatus concerned; so that, while excitation of the nerves at the base of the tongue will excite the respiratory center when this is paralyzed, similar excitation will depress it if it is in a state of exaggerated excitability.

Pernicious Effects from the Bromides.— Dr. S. Weir Mitchell (*University Médical Magazine*) notes among the effects of the use of bromides, increase of irritability or melancholy at menstruation, bad temper, suicidal or homicidal tendencies, temporary delusions in trauma affecting the brain, and in exceptional cases melancholia rising to the grade of danger and occasioning suicidal impulses. In one instance, when irritability followed the use of bromides, excitability could be as easily and more quickly awakened by the smallest amount of alcoholic stimulus or by the large use of tobacco.

Camphor Intoxication.— It is reported that a woman was recently discovered in the streets of St. Louis in a state of complete intoxication and unconsciousness as the result of the excessive use of camphor, to which she was very much addicted. Camphor-eating is one of the new developments in drug addiction.

The Corpuscles of Human Blood. — Dr. Whitney, of Boston, according to the Boston *Medical and Surgical Journal*, says one cannot make an absolute identification, and say, "This is human blood;" but it may be said, "This is consistent with human blood." This is an important admission, in view of the consequences heretofore of claiming that certain blood stains and corpuscles were positively and absolutely human blood-stains and corpuscles. If such marks are only "consistent" with human blood, to swear away a man's life upon such evidence is little less than criminal.— *The Medical Examiner, July, 1896.*

Treatment with Serum from Convalescents.— Weisbecker has observed (*Therap. Wochenschrift*, June 28) that if serum taken from patients recovering from measles be injected into others during the stage of incubation, the incipient disease is much modified, and cases of measles and pneumonia sometimes arrested. He urges others to make experiments of this nature in scarlet fever, measles, etc.

Oxygen after Ether.— Dr. Morrison recommends the inhalation of oxygen as a means of relieving the unpleasant effects following ether administration. He finds that the best means of administering it is by means of a catheter passed through the nose.

Therapeutic Use of the X-Ray.— Recent observations seem to show that the X-ray is capable of producing physiological effects. Long exposure of the skin to the influence of the X-ray produces pain, swelling, blistering, and discoloration, similar to the effects of sunburn.

The Causes of Death in Prominent Persons.— Dr. Michel has been looking up this subject, and has reported many interesting facts in the *Canadian Medical Review*. The following statements he believes to be accurate: Lord Bacon died of pneumonia, aged sixty-five; Ben Jonson, of apoplexy; Benjamin Franklin, of abscess in the lung, aged eighty-four; Washington, of acute laryngitis, aged sixty-seven; Edward Gibbon, of hydrocele, aged fifty-seven; Napoleon, of cancer of the stomach; Thomas Gray, of gout, aged fifty-four; Robert Burns, of rheumatism, aged thirty-seven; Lord Byron, of heart-disease, aged thirty-six; Martin Luther, of gastritis; Cromwell, of intermittent fever; Sir Walter Scott, of apoplexy; Shelley, by drowning; Keats, of consumption; John Milton, of stone in the bladder; Voltaire, of stranguary, probably due to enlarged prostate.

Women Less Sensitive to Pain than Men. — Ottolenghi (*Centralblatt für Nerv. u. Psych.*, No. 7) has been making an extensive investigation of the comparative sensibility to pain in men and women. As the result of his investigation, he concludes as follows: —

1. Women are less sensitive to pain than men.

2. Sensitiveness is less in early life, increasing to the twenty-fourth year, and decreasing afterward.

3. The more highly cultivated classes are most sensitive to pain; degenerates are less sensitive, some of them being very obtuse to pain sensations.

4. Sensibility to pain varies between much greater limits in women than in men, the ability to endure pain reaching a limit far beyond the limit in men.

5. General sensibility is greatest in the nineteenth year.

6. General sensibility depends upon the peripheral nerves.

7. The lesser sensibility to pain in woman is an indication of her inferiority to man, as the uncivilized are less sensitive than the civilized, and degenerates less sensitive than normal individuals.

8. Lessened sensibility to pain in woman is related to her greater longevity.

Massage in the Treatment of Joint Fracture. — Pello (*Archiv di Ortoped.*) draws attention to the value of early massage and passive movement in the case of intra-articular fractures. He believes that the usual method of treatment by prolonged fixation delays recovery, and only too often leads to ankylosis. He then reports three cases where massage was practised at once, and where the only fixing apparatus was a starched bandage freely cut away so as to allow of the massage. The first case was that of a boy, aged six, with intra-articular fracture of the trochlear process of the right humerus. Light massage was practised at once, and gave much relief to the pain; the joint was then put up in a starched bandage. The next day a good part of the bandage was cut off, and twenty minutes' massage practised. On the fifth day slight passive movement of the joint was begun. On the tenth day the bandage was discarded; at the end of the month the elbow was as free in its movements as before the fracture. The second case was that of a man, aged thirty-eight, with Colles' fracture, who was treated in a similar way and completely cured, with free movement and no deformity, on the fifteenth day. The third case was that of a man, aged forty, who fractured his tibia and patella. The tibial fracture was treated in the usual way; the patellar fracture was unrecognized at the time, and after seventy days' treatment, when the patient was first seen by the author, although the tibial fracture was healed, the limb was useless, as the patellar fragments were distant two centimeters, and only worked by weak fibrous union. Massage was practised, and after fifteen days the patient could walk with crutches, the edema had disappeared, and flexion of the knee (previously rigid) could be obtained. At the end of a month the patient could walk well with a simple stick; in two months he could walk up-stairs so that no one would suspect there had been any injury to the limb. — *British Medical Journal.*

An Easy and Ready Method of Circumcision. — John W. Ross, surgeon of the United States Navy (retired), says in the *Medical Record*, Aug. 31, 1895: "Retract the foreskin; insert the glans penis up to the corona into the open mouth of a glass test-tube, draw the foreskin well forward over the end of the tube, tie a strong, small silk cord very tightly around the foreskin, immediately in front of the flange of the tube; amputate the foreskin one eighth of an inch in front of the constricting cord by a circular sweep of the knife; unite the mucous and cutaneous edges of the stump of the prepuce by eight or ten fine interrupted sutures; cut the constricting cord, remove the tube, cover the cut edges well with powdered idoform; encircle the anterior half of the penis with a roller bandage of iodoform gauze, allowing the meatus to project slightly for facility of urination without soiling or removing the dressing, and keep the patient in bed, with penis elevated, from twenty-four to forty-eight hours."

Rabies in Cats. — It is not well known that cats, as well as dogs, are subject to rabies. At the Pasteur Institute, in Paris, one in twenty of all the cases treated are due to the bites of rabid cats.

Ichthyol in the Treatment of Ozena.— Our Vienna confrères (*La Semaine Médicale*, August, 1896) have been very successful recently in the treatment of ozena with ichthyol. It is claimed that the fetid, offensive breath can be more rapidly and completely removed by ichthyol than with any other known remedy. After first cleansing thoroughly with some alkaline solution to remove the crusts and inspissated mucus, the nasal cavities are flushed with a two to five per cent. aqueous solution of ichthyol, precautions being taken to avoid the disagreeable features of the nasal douche. A cotton applicator, supplied with a twenty-five to thirty per cent. solution of ichthyol, is then applied to the mucous membrane of the affected areas, both anterior and posterior nares being thoroughly swabbed. It has also been recommended in the treatment of pharyngitis siccus.— *The Laryngoscope.*

Spirits of Turpentine in the Treatment of Burns.— M. L. M' Innis (New York *Medical Record*) says that spirits of turpentine applied to a burn of either the first, second, or third degree will almost at once relieve the pain. The burn will heal much more rapidly than by any other treatment in the author's experience. He applies the turpentine as follows: After wrapping a thin layer of absorbent cotton over the burn, he saturates it with the common commercial turpentine, which is generally found in every house, and then bandages. Being volatile, the turpentine evaporates, and it is therefore necessary to keep the cotton moistened with it. When there are large blebs, he opens them on the second or third day. It is best to keep the spirits off the healthy skin if possible, as sometimes pain is produced by its action.

Persian Cure for Dysentery.— Surgeon-Major T. S. Avetoon, of the British army in India, communicates to the London *Lancet*, a prescription from a medical work in the Persian language, which he says he has used successfully, with a slight modification, in about thirty cases of dysentery, during a little over two years. The dose is a dram of cinnamon bark reduced to a fine powder and made into a ball with a few drops of water, and is repeated morning and evening until a cure is effected. He says that his patients have often been cured with one or two doses, and his worst cases with five. The powerful antiseptic and germ-killing property of cinnamon will be recalled in this connection.

Prostatic Hypertrophy.— In a paper read before the British Medical Association at its recent meeting, Dr. Mc Ewen stated that he had operated in five cases, three by double orcheotomy and two by resection of the vas deferens. His conclusions were: 1. In many cases castration causes more or less atrophy of the prostate. 2. Atrophy occurs most commonly when the prostate is soft. 3. It is of most value when the enlargement is general. 4. Cystitis may be relieved or cured. 5. In marked cystitis, drainage is better. 6. It may do away with the necessity for the use of the catheter. 7. Or the catheter may be required less frequently. 8. Resection of the vas deferens acts more slowly, but the effect is similar.— *British Medical Journal.*

Thermo-Therapeutics of Gonorrhea.— Neisser has stated that the gonococcus loses its power of development at a temperature of 113° F. Callari (*Gaz. Degli Osp. e Degli Clinic*) has found that the normal male urethra will bear this temperature, and the female two degrees higher. He has been treating gonorrhea with injections at 113°, and reports a progressive disappearance of the gonococci in the majority of cases with this treatment. In order to avoid unnecessary congestion, he injects a six-per-cent. solution of cocain ten minutes before.

Diuretic Solution.—

℞

Sugar of milk	100 parts.
Lactic acid	15 "
Water	500 "

Use as a beverage at frequent intervals.

Danger from Digitalis.— Dr. A. Jacobi recently called attention to the fact that digitalis should be carefully avoided in aged persons because of its action on the arterioles of the heart, whereby the general nutrition is impaired.

BACTERIOLOGICAL NOTES.

[THE notes appearing in this department are abstracts or translations prepared expressly for MODERN MEDICINE AND BACTERIOLOGICAL REVIEW, from original sources.]

How to Distinguish the Smegma Bacillus from the Tubercle Bacillus. — Grethe (*Fortschr. der Med.*, May, 1896) points out the need of some simple method of differentiating the smegma bacillus from the tubercle. The inability to distinguish between these two germs has led to serious results in a number of instances; in one case a supposed tubercular kidney was removed, but upon subsequent examination it was found that there was present only calculous pyelitis. In this case supposed tubercle bacilli were found in the urine. A number of other cases have been reported in which similar errors have occurred.

Grethe has found that reliable results are obtained by staining with a concentrated alcoholic methylene blue. This stains the smegma bacillus well; and if the preparation be first stained in the ordinary manner with carbol fuchsin, the tubercle bacillus, if present, is easily identified by its red color contrasting with the blue of the rest of the preparation, including the smegma bacillus.

Cerebrospinal Meningitis.— Heubner (*Deut. Med. Woch.*, July 2, 1896) observes that the view which would attribute the epidemic disease to the pneumococcus is not satisfactory. Weischelbaum found in one epidemic a special micro-organism occurring in twos and fours. They lay with their broad sides apposed and not lanceolate. It was found chiefly within the cells; hence the name "meningococcus intracellularis."

Heubner has had a case in his clinic in which it was possible to demonstrate the presence of this micro-organism both during life and after death in an infant, aged one and one-half years. By spinal puncture a turbid, and sometimes distinctly purulent, fluid was obtained, and in the pus cells a diplococcus or tetracoccus was found. This micro-organism was then obtained in pure culture. The injection of the fluid (obtained by spinal puncture) into the vertebral canal gave negative results in rabbits and guinea-pigs. In a young dog the result was doubtful, but in two goats a meningitis was produced, and the meningococcus was obtained from the exudation. Thus in susceptible animals, as in man, the meningococcus produces the same disease.

The author showed by injecting the pneumococcus obtained from a pleural effusion that the virulence of the meningococcus was less than that of the pneumococcus. This corresponds with clinical experience, which shows that a pneumococcus meningitis is rarely recovered from, the fatal result occurring in a few days. In epidemic cerebrospinal meningitis, on the other hand, only one third to one half of the cases prove fatal. The recognition of this form of meningitis by the help of spinal puncture is of considerable importance.— *British Medical Journal.*

The Pathogenic Action of the Micro-organisms of Friedlander and Fraenkel.—Fleroff (*Th. de Moscou*, 1896) points that before the discovery of the Talamon-Fraenkel pneumococcus, Friedlander described a bacillus which for a long time was considered to be the agent of pneumonia. More recently this rôle has been given exclusively to the pneumococcus of Fraenkel, although the latter is found as a saprophyte in the mouth, and though in many cases of pneumonia it has been impossible to prove its presence. This investigator has made experiments with a view to determining the real pathogenic importance of these two microbes, and has found that while either of them may cause pneumonia, septicemia, or extra-pulmonary trouble, the pneumococcus seems to be more toxic, but that its presence in the expectoration is not pathognomonic. He concludes that neither of the two microbes ought to be considered the specific agent of pneumonia.

Typhoid Bacilli in a Five-months Fetus.— Etienne, of Nancy (*Gazette Hebdom. de Méd. et de Chir.* No. 16, 1896), examined a five-months fetus which had been delivered on the twenty-ninth day after typhoid fever had declared itself in the mother. The child's spleen and intestines, as well as other organs, showed no evidence of the disease, and the placenta was healthy. Blood from the right side of the heart, and from the spleen, the liver, and the placenta, was carefully examined, and cultures were made in

which the typhoid bacillus was found in abundance. The fetus had really died of typical acute blood-poisoning from a large dose of the bacillus before the occurrence of any local change.

Bacillus of Measles.— J. Czajkowski (*Centralblatt für Bakteriologie Parisitenkunde*, 1896, XVIII, Nos. 17 and 18) states that he believes he has found the bacillus which produces measles. He examined the blood of fifty-six patients having this disease, thirty-seven specimens being examined microscopically, and cultures made in nineteen cases.

The bacilli, like those described by Pielicke and Cannon, were thin rods varying in length from 0.5 up to the diameter of a red-blood corpuscle; they are extra-cellular.

They are stained irregularly by all aniline dyes.

Cultures grow on various media, but not upon gelatin or agar. Blood added to the media increases their development. In solid media the cultures first show on the third or fourth day in the form of dewdrop colonies. A media composed of sterilized serum from the abdominal cavity seems best suited to their culture, and in this the colonies form a heavy sediment, varying from a white to a yellowish-gray color. They thrive best at blood temperature.

Rabbits are immune; mice die of septicemia from a subcutaneous injection in three or four days. The bacilli were recovered from the blood, liver, and spleen in pure cultures.

Fatal Septicemia due to the Micrococcus Tetragenus.— Chauffard and Rémond (*Arch. de Méd. Ex.*, p. 309, 1896) point out that the virulence of this micrococcus, which has been found in the mouths of healthy persons, and was detected by Koch in tuberculous cavities, is proved by numerous recorded cases, in which it has caused suppurations, generally in the cervico-facial or cephalic regions. In the two following cases its effects were fatal: —

A girl of fifteen years died with typhoid symptoms about eight weeks after the beginning of a severe influenza; the necroscopy showed multiple suppuration of the joints, acute purulent pericarditis, abscess of the myocardium, pulmonary infarcts, and abscesses of the liver and kidneys. All the abscesses had a typical appearance of fatty caseation, and the brown effusions in the pleura and pericardium had numerous oily drops on their surface. The tetragenus was present in all the lesions. A young boy of eight years also died with symptoms of secondary infection, following suppurative arthritis of the right knee, which, when aspirated, gave a pure culture of the M. tetragenus. The microbe was also found (with others) in the scrapings of an ulcer on the patient's tongue opposite a carious tooth. In both cases the cultivations of the micrococcus proved virulent to animals, and the pus in the consequent abscesses had the same characteristic appearance.

Tuberculosis in Goats.— From the following it will be seen that the hitherto accepted theory that goats are immune to tuberculosis is not altogether correct. Bulling (*Indian Medical Record*) records a case of pulmonary tuberculosis in a goat. Both lungs were adherent, and large and small tuberculous foci were present. The author concludes that it would be well to examine into the possibility of the transmission of tuberculosis through the agency of goats, and to consume their milk only after boiling, or after the goat has been shown to be free from tuberculosis by the absence of reaction after the injection of tuberculin.

Herpes Facialis as a Symptom of Bacterial Intoxication. —. Friedreich (*Berlin. klin. Wochenschrift*, 1895, Nos. 49 and 50) made some experiments with cultures of streptococci, as used by Coley in the treatment of malignant disease. In seven cases herpes facialis was observed. All these were cases in which sterilized cultures of streptococcus and prodigiosus were used. The eruption appeared not earlier than thirty nor later than fifty-eight hours after injection, and in two cases was followed by recidiva. As there was no infection in these cases, the herpes must be considered as due to intoxication.

Cohn says a single germ is capable, under good conditions, of multiplying in three days to 4,772,000,000,000,000, thus making a mass weighing 7500 tons.

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SCHOOL SANITATION.

A FEW weeks ago the writer undertook to make a little investigation for the purpose of ascertaining the opinions of leading public men upon several questions of importance pertaining to the sanitary condition of schools and school children, and to this end sent out a circular letter containing the following questions: —

1. Should every public school in the poorer districts of the city have a bath department or lavatory? and should personal cleanliness be enforced by the teachers?

2. Should every public school have connected with it a health department, with a qualified physician at the head of the same? and should the building occupied as a public school and the pupils attending the public school be regularly examined with reference to health and sanitary conditions?

3. Should teachers be required to give special attention to such matters as the proper attitude in sitting, the correct method of breathing, and the development of a fine figure, and a dignified physical bearing?

4. Is it not evident that the children attending our public schools are exposed to deteriorating influences which might be eliminated by proper rules and regulations for conserving the health of students? and should not such rules and regulations be enforced in every school?

We publish herewith the reports thus far received, and others are coming in daily. It is certainly encouraging that our governors, members of Congress, and other men in high official positions are giving so much attention to the subject of school sanitation; and it is especially a matter of congratulation that opinions are so unanimous upon questions of leading importance with reference to the necessity for greater attention to the sanitary conditions of human beings during the school period of their lives.

Hon. John T. Rich, governor of Michigan, replies to our questions as follows: —

1. "Emphatically, Yes.

2. "I should think it would hardly be necessary, at this time, when health matters are receiving so much attention from every one.

3. "I think they should."

4. "Yes."

Hon. John E. Rickards, governor of Montana, replies in the affirmative to all the questions.

Hon. O. Vincent Coffin, governor of Connecticut, replies as follows: —

1. "(Should personal cleanliness be enforced by teachers?) Yes.

2. "(Should the building occupied as a public school and the pupils attending the public school be regularly examined with reference to health and sanitary conditions?) Systematic and adequate attention should be given to the points referred to in the clause I have placed in parenthesis.

3. "Yes.

4. "It must go without saying that it is very desirable to eliminate 'deteriorating influences,' and it necessarily follows that such reasonable and practical rules and regulations as will materially aid in that direction should be adopted and enforced."

From Hon. A. W. M'Intire, governor of Colorado : —

1. "Yes, of course.

2. "Wherever practicable.

3. "Certainly.

4. "Obviously, Yes."

From Hon. William C. Oates, governor of Alabama : —

1. "Yes, certainly.

2. "Yes; but one physician could serve several schools, and that would be cheaper.

3. "Yes.

4. "Yes."

From Hon. L. F. Magann : —

1. "I am in favor of public baths in the poorer districts of large cities.

2. "I would not favor the maintenance of sanitary inspectors in connection with the school system.

3. "No."

From Hon. Elijah A. Morse, of Massachusetts : —

1. "To this question, I say, Most certainly; personal cleanliness should be enforced, not only for the pupil's own sake, but for the comfort and health of the other pupils as well. Cleanliness is next to godliness.

2. "It is certainly very desirable to have a qualified physician examine the pupils with a view to discovering predisposition to disease, especially with reference to pulmonary troubles, in order that the parents of poor children especially might be advised to take measures to defend the health of their children by warm wraps and dry feet and other precautions against this insidious disease.

3. "Yes. Many a boy or girl is made round-shouldered for life by an improper attitude while at study. The body is the temple for the indwelling of the Holy Ghost, and a good figure and dignified physical bearing is an important adjunct to success in life.

4. "Most undoubtedly. Too much attention cannot be paid to this important matter."

From Fred T. Dubois, U. S. Senate : —

"There can be but one answer to these questions; viz, in the affirmative. I would add to the requirements mentioned, a thorough athletic training, under proper supervision."

From Hon. Henry M. Baker : —

1. "Yes, to the first clause, whenever a bath department or lavatory can be procured without diminishing the number of school days or the quality of the instruction. The idea is entirely right. To the second clause, I unhesitatingly answer, Yes.

2. "To the first question under item No. 2, I say, No. To the second, Yes.

3. "Emphatically, yes.

4. "There should be no 'deteriorating influences' in our public schools, and in my opinion they are singularly free from them, except the evil which must necessarily come from the home into the school, so long as it exists there. Therefore proper rules and regulations should be prepared and enforced, not only to conserve the health of the students, but to improve their manners, language, and entire conduct while in school or on the school grounds. That done, the home will be reached, and, in many instances, improved."

Hon. D. G. Colson answers "Yes" to all the questions.

Hon. A. R. Kisfer replies as follows : —

1. "Yes, whenever the school funds will permit. Personal cleanliness should be enforced by teachers.

2. "Answer same as No. 1.

3. "Absolutely.

4. "Yes."

At the same time a circular embodying the following questions was sent to the

superintendents of schools in a number of the principal cities of the United States: —

1. What is your opinion of the necessity for the medical supervision of public schools?

2. Should the pupils in public schools have some sort of medical examination on entering the school, and at stated intervals of a few months, or at least once a year, while in the school?

3. Do you consider a bath department or lavatory essential for a public school building? If so, what is the teacher's duty with relation to the matter of cleanliness of pupils?

4. Do you know of any public school which maintains a bath department for the use of its pupils? If so, kindly give the address of same.

5. Do pupils of the schools under your supervision receive regular instruction and training in proper breathing, and proper position or attitude in sitting, standing, or walking?

6. Are systematic gymnastic exercises a regular part of the day's program in your schools? or if in part of the schools, and not in all, in what proportion?

The following are the answers received to the above questions. The reader will be impressed with the unanimity of opinion respecting the necessity for radical reforms as to the sanitary care of children in the public schools. It is also gratifying to note that in some schools something is already being done in this line.

From Buel T. Davis, superintendent of public schools, Oshkosh, Wis.: —

1. "There should be such supervision.

2. "Yes.

3. "It would be a good thing, if properly organized.

4. "I know of none.

5. "This is not thoroughly or systematically done.

6. "Such exercises are recommended, but are not as systematically carried out as they should be."

From W. E. Robinson, superintendent of public schools, Detroit, Mich.: —

1. "It would be a good thing if the proper amount of funds could be secured.

2. "As per No. 1.

3. "It is the teacher's duty to see that pupils are kept clean.

4. "We have had, for eight or nine years, a bath department in connection with our truant school. It should always be a shower bath.

5. "Yes.

6. "Yes."

From A. W. Carley, superintendent of public schools, La Crosse, Wis.: —

1. "Good, if wisely done.

2. "Yes.

3. "It is desirable." To the last clause he answers, "To see that they are clean."

4. "Yes, some Milwaukee schools,— Milwaukee Normal, West Superior Normal.

5. "Yes.

6. "Yes."

From W. S. Perry, superintendent of public schools, Ann Arbor, Mich.: —

1. "I would not place medical supervision of public schools among the necessities, but I would have every teacher endeavor to secure the best possible health conditions of his school.

2. "Yes, to this extent, that all pupils should be required to present a certificate of vaccination before entering a public school.

3. "I never have taught in or had charge of a school where I thought it wise to recommend a bath department; neither would I permit uncleanliness in schools. That part of child-care is essential, and exclusively a home duty.

4. "No.

5. "They receive quite regular but not adequate instruction in such matters."

From H. N. Worth, superintendent of public schools, Steubenville, Ohio: —

1. "It would doubtless be beneficial, but is hardly to be called a necessity.

2. "This, like the first proposition, would be a good thing, but the public will have to be educated up to it before it will be practicable.

3. "To the first part of this, I would make the same answer as to No. 2. To the second part, I would say, It is the teacher's duty to see that the children come to school neat and clean as to person and dress, and that they be instructed in hygienic principles requiring such cleanliness. But the home environment is too often a factor in fostering uncleanly habits.

4. "No.

5. "Yes.

6. "Yes."

From H. A. Simons, superintendent of public schools, Steven's Point, Wis.: —

1. "Very important, if the supervision is made by a competent official.

2. "Yes, if the examiner is competent.

3. "A lavatory is the least facility a school should furnish.

4. "No.

5. "Not regular instruction.

6. "No."

From D. K. Goss, superintendent of public schools, Indianapolis, Ind.: —

1. "It depends upon circumstances.

2. "If such examination is a real examination, yes.

3. "No.

4. "No.

5. "Yes.

6. "A regular part of the instruction throughout."

From F. D. Lyon, superintendent of public schools, Mansfield, Ohio: —

1. "Excellent, especially for eyes and ears.

2. "I think it would be well.

3. "Very desirable.

4. "No.

5. "Yes.

6. "We have systematic physical culture exercises; they form a part of the daily program."

From S. C. Price, superintendent of public schools, Mt. Clemens, Mich.: —

1. "A good thing — perhaps the best.

2. "Yes.

5. "Yes, each day.

6. "In all departments."

From J. B. Estabrook, superintendent of public schools, Racine, Wis.: —

1. "I believe that the introduction of medical supervision into public schools would be a marked step in advance, from an educational and physical standpoint.

2. "It strikes me that a medical examination of the pupils of the public schools at stated intervals (at least once a year) would be exceedingly beneficial.

3. "A bath department or lavatory, while possibly not essential, would no doubt be a blessing in the great majority of schools. It is the teacher's duty to see that no pupil sits in the schoolroom in an untidy or uncleanly condition. It is not only a bad example, but an actual injustice to the other members of the department, to allow such a pupil to remain seated among them.

4. "I know of no public school that maintains a bath department.

5. "Pupils in the various grades of our schools receive instruction in proper breathing, proper position in sitting, standing, and walking in connection with their lessons in physiology."

W. P. Hepburn, superintendent of public schools, Clarinda, Iowa, answers all the questions in the affirmative.

From H. G. Woody, superintendent of public schools, Kokomo, Ind.: —

1. "It would be helpful to provide an expert that is really an expert, not a quack.

2. "Yes, but not essential.

3. "Not an essential, but it would prove a blessing. All our new buildings have wash-basins and mirrors. Teachers should cultivate habits of cleanliness.

4. "No.

5. "Yes.

6. "Yes, in all grades below high school."

From E. C. Warriner, acting superintendent of public schools, Saginaw, East Side, Mich.: —

1. "Medical supervision and physical training are the greatest needs of our public school system to-day.

2. "Yes.

3. "Not essential, but desirable.

4. "Ishpeming, Mich., high school.

5 and 6. "Yes."

From Y. N. Study, Fort Wayne, Ind.: —

1. "It would be a good feature in school advancement.

2. "I think so.

3. "A lavatory is an essential in a modern school. As to bathing, I am not so sure.

4. "No.

5. "Yes."

From W. C. Belman, superintendent of public schools, Hammond, Ind.: —

1. "I think it necessary.

2. "They should.

3. "It is essential, but the practical workings of it are not clear.

4. "I do not.

5. "They do.

6. "We have five-minute exercises each half day, besides the intermission, or recess, of five minutes."

From F. E. Converse, superintendent of city schools, Pontiac, Mich.: —

1. "It seems to me to be very desirable.

2. "Yes.

3. "The teacher should teach cleanliness by precept and example. A filthy child should not be allowed to remain so.

4. "No.

5. "I try to secure such through the regular teachers.

6. "In three fourths of the schools."

From W. G. Coburn, superintendent of public schools, Battle Creek, Mich.: —

1. "I think we should have a medical supervisor in our schools.

2. "At the entrance, and at least once during the year.

3. "I believe each school should have a lavatory.

4. "I know of none on a large scale. We have wash-bowls, towels, combs, brushes, etc., in all the Battle Creek public schools.

5. "We expect to have regular instruction this year in the above-mentioned exercises.

6. "A regular part."

From F. R. Hathaway, superintendent of public schools, Flint, Mich.: —

1. "I don't think it necessary.

2 and 3. "No.

4. "Ishpeming, Mich.

5 and 6. "Yes."

From S. B. Laird, superintendent of public schools, Lansing, Mich.: —

1. "I believe the necessity for medical supervision of public schools exists, and that it is imperative.

2. "Pupils should be examined on entering school as to health of eyes, ears, and nostrils at least, and perhaps again at the beginning of the second semester.

3. "A bath would be a promoter of health and cleanliness, hence of better morals.

4. "No. The pupils of our schools have a certain measure of instruction along these lines, but it is not systematized upon physiological principles.

6. "The ordinary school gymnastics are practised in the grades every day."

From W. W. Chalmers, superintendent of public schools, Grand Rapids, Mich.: —

1 and 2. "I have not given sufficient thought to these questions to be able to answer them.

3. "Yes.

4. "Yes, our truant school.

5. "Yes, to the first part.

6. "Yes."

From W. H. Wiley, superintendent of public schools, Terre Haute, Ind.: —

1. "It would be beneficial in many cases.

2. "Such a plan would enable teachers to better guard the health of pupils.

3. "Our teachers insist upon pupils' coming to school in good condition.

4. "To the first part of No. 4, No.

5. "Yes.

6. "We have systematic instruction in gymnastics."

TOBACCO AND EDUCATION.

A CRUSADE against the use of tobacco has recently been started in a number of our American universities. It is a recognized fact that tobacco, when taken into the system in any form, is injurious not only to the physical health, but to the intellectual development as well. The results obtained in schools where the use of tobacco has been discarded are very encouraging, and show clearly the harmful effect which this obnoxious weed has upon the system. It is gratifying to note that some of the best colleges of our country have taken a decided stand against its use by their students. The Boston University has issued an ordinance that those students who are unwilling to forego the use of tobacco while within the precincts of the university will have their fees returned, and their names taken from the books. The Ohio Wesleyan University has made a rule forbidding its students to use tobacco in any form, and other universities have made similar ordinances.

In some of the higher educational institutions of this country attempts have been made to obtain statistics as to the effects of tobacco on the academic youth. In 1891 the official physician of Yale published the results of observations on the under-graduates of that university. In a class of one hundred and forty-seven students, he found that in four years seventy-seven who did not use tobacco surpassed the seventy who did use it to the extent of 10.4 per cent. in increase of weight, twenty-four per cent. in increase of height, and 26.7 per cent. in increase of chest girth. The most marked difference was, however, in point of lung capacity, the abstainers showing an average gain of 77.5 per cent. more than smokers or chewers. Among the undergraduates at Amherst it was found that during the four years the abstainers from tobacco gained twenty-four per cent. in weight, thirty-seven per cent. in height, forty-two per cent. in chest girth, and seventy-five per cent. in lung capacity, over those who used tobacco. C. E. S.

Toxicity of the Gastric Juice in Epilepsy.— Gastric juice obtained from patients suffering from major epilepsy, when injected into rabbits, causes a fall of temperature, slowness of respiration, weakness, general convulsions, and subsequent death. The poisonous properties contained in the gastric juice are most abundant just before and just after an attack of epilepsy, and are in proportion to the duration and violence of the attack. The exact source of this toxic substance is not known; it may be due to primary gastric derangement, or to a disorder of the gastric function caused by some alteration in the nervous system; or it may be some poison excreted by the mucous membrane of the stomach from the blood. Whatever the source of the poisonous material, it would be a rational measure to wash out the stomach in cases suffering from this disease. C. E. S.

Reviews.

Practical Points in Nursing.— By Emily A. M. Stoney. Philadelphia: W. B. Saunders.

This work is one of the most complete upon the subject of nursing which has yet appeared. The author is a trained nurse, and has evidently had a large practical experience. The work is prepared with a great amount of painstaking labor, and will be welcomed by nurses everywhere as a valuable addition to the practical literature pertaining to the care of the sick. It is especially satisfactory to notice the considerable amount of space given to hydrotherapy. Some of the directions given would perhaps hardly be considered up to the standard of the best usage, but will nevertheless prove serviceable, and, as an introduction to the subject, may be considered invaluable. The majority of text-books on nursing heretofore published have been particularly deficient in information of this nature.

A Practical Treatise on Medical Diagnosis.— By John H. Musser, M. D. Philadelphia: Lea Brothers & Co.

We do not hesitate to pronounce this work the best volume on this subject which has appeared in recent times. Perhaps the least satisfactory portion of the work is that relating to the examination of the gastric contents. This subject is one to which much attention has recently been given, and which, at the present time, may be said to rest upon a thoroughly scientific basis. The method of Messrs. Hayem and Winter, the only thoroughly reliable and practical method of the study of the gastric fluids, is not mentioned, and no attention is apparently given to the important relation of the combined chlorin to free hydrochloric acid in the estimation of the acidity of the stomach contents. The work is nevertheless an admirable condensation of the most important of the valuable facts and methods of diagnosis at the disposal of the modern practitioner, and it will be welcomed everywhere as a thoroughly up-to-date treatise. The plates, although half-tone, are so admirably executed that it is difficult to distinguish them from the finest lithographs. The work is printed on fine, strong paper, and is an excellent specimen of the splendid bookmaking for which these publishers have long been noted.

A Review of Dr. Wallace and the Railway Surgeons on Spinal Concussions.— By R. M. Swearingen, M. D., Austin, Texas.

This interesting paper is a very sharp but courteous arraignment of those surgeons — particularly surgeons employed by railroads in recent years — who have, with considerable unanimity, and, it must be said, with no small degree of animosity, attacked the views brought forward by Professor John Ericsson, an eminent English surgeon, respecting the spinal injuries which frequently result from railway accidents, and which are commonly included under the general term "spinal concussion," or "railway spine." Dr. Swearingen is an honest and experienced physician, and he takes an honest and unbiased view of this subject, although it is a view not particularly helpful to the railroad companies. No doubt railroad companies, as well as other incorporated bodies, are sometimes imposed upon, but the fact that there are occasional instances of imposture should not be regarded as evidence that every person who claims to have suffered from spinal concussion as the result of a railroad accident is an impostor. Dr. Swearingen has done the medical profession as well as suffering humanity, a service of no small value in the preparation of this able paper.

A Concise Description of the Anatomy and Physiology of the Eye and its Appendages. —Prepared by Ludovic Hirschfeld. New York: H. A. Daniels, M. D.

This little quarto volume of 16 pages comprises a concise and complete description of the eye. Its chief value consists in the large number of beautiful lithographic cuts by which the text is illustrated. These are composed of six plates, each of which is really a work of art. Every detail of the structure of the eye is clearly displayed, so that this organ and the surrounding structures are pictorially portrayed in a manner superior to anything which to our knowledge has been heretofore attempted. The work is one which every specialist will consider indispensable to his library, and there are few physicians who might not find profit in perusing it.

REPORT OF EXAMINATION OF BLOOD.

FOR NOVEMBER.

Blood Count.	Men.	Women.	Total.
Over 5,000,000	3	4	7
Between 4,500,000 and 5,000,000	29	10	39
" 4,000,000 " 4,500,000	13	23	36
" 3,500,000 " 4,000,000	6	5	11
" 3,000,000 " 3,500,000		1	1
" 2,500,000 " 3,000,000	2		2
Totals	53	43	96

Hemoglobin.	Men.	Women.	Total.
100 per cent.	12	4	16
93 " "	34	34	68
85 " "	4	3	7
78 " "	1		1
71 " "		1	1
65 " "	2	1	3
Totals	53	43	96

Gastric Laboratory Report for November.—Total number of analyses, 81; regular analyses, 72; experimental, 9.

The regular cases were from the following States and countries: Michigan, 16; Indiana, 8; Ohio, 8; Illinois, 7; Iowa, 5; Minnesota, 4; Canada, 3; Pennsylvania, 2; Wisconsin, 2; Massachusetts, 2; Nebraska, 2; New York, 2; Missouri, 2; Kentucky, 2; Virginia, 1; Washington, 1; Maine, 1; District of Columbia, 1; South Carolina, 1; New Mexico, 1; Kansas, 1. Total, 72.

Sputum Examinations for November.—There were 25 examinations made, 23 of which were new cases. The tubercular bacillus was found in 1 case.

Urinary Laboratory Report for November. — Number of specimens examined, 199; number of cases, 133. Number of cases with albumen, 11; pus, 49; blood, 6; casts, 5; sugar, 5; bile, 1. One specimen was tested for toxicity.

Bacteriological Examinations of Stomach Fluids for November.—Total number of fluids examined, 90; regular, 81; experimental, 9. Four specimens were received by mail for examination.

PUBLISHERS' DEPARTMENT.

CHANGE OF NAME.— The editors of *Mathews's Medical Quarterly* announce that with the January issue of that publication its name will be changed to *Mathews's Quarterly Journal of Rectal and Gastro-Intestinal Diseases*. This is a change which has been deemed necessary for some time, as it is essential that the title of a medical journal should convey to the reader an idea of its contents, and this has not been the case with its name from the beginning. There will be no change in the policy of the journal. As it will continue to be the only English publication devoted to the disease and surgery of the rectum and gastro-intestinal tract, the articles appearing in it will be limited to these subjects. The journal will continue to be edited by Drs. J. M. Mathews and Henry E. Tuley, and published in Louisville, Ky.

ANNOUNCEMENT OF THE PASTEUR MONUMENT COMMITTEE OF THE UNITED STATES,— COSMOS CLUB, WASHINGTON, D. C.—It has been decided to erect in one of the squares of Paris a monument to the memory of M. Pasteur. Statues or busts will also no doubt be located at his birthplace and in other cities. The Paris committee has, however, wisely determined that the statue obtained through international effort shall be located at Paris, where it will be seen by the greatest number of his countrymen and also by the greatest number of his admirers from other lands. The officers of the committee for the United States are the following: Dr. D. E. Salmon, Chairman, Chief of the Bureau of Animal Industry; Dr. E. A. De Schweinitz, Secretary, President of the Chemical Society of Washington, Chief Chemist Biochemic Laboratory; Dr. G. Brown Goode, Treasurer, Assistant Secretary of the Smithsonian Institute.

We believe it is unnecessary to urge any one to subscribe. The contributions of Pasteur to science and to the cause of humanity were so extraordinary, and are so well known and so thoroughly appreciated in America that our people only need the opportunity in order to demonstrate their deep interest. All can unite in honoring Pasteur.

The above committee supplies subscription blanks, which should be returned in the accompanying envelope, together with a money-order, check, or draft covering the amount subscribed. All checks, etc., should be made payable to "Treasurer Pasteur Monument Committee," and when received by the secretary, a numbered receipt will be forwarded to the sender The original subscription papers will be forwarded to the Paris committee for preservation.

It is our purpose to do our work as largely as possible through societies or other organizations. We prefer to have each organization appoint one of its members as an associate member of this committee, with authorization to collect and forward the subscriptions. The amounts thus far subscribed by individuals vary from fifty cents to ten dollars. It is hoped that no one who is interested will hesitate to place his name upon the list because he cannot give the maximum amount.

Please let this receive your early attention, and in that way assist our committee, which must conduct correspondence with the societies of the entire country.

DIRECTORY OF SANITARIUMS.

THE following institutions are conducted under the same general management as the Sanitarium at Battle Creek, Mich., which has long been known as the most thoroughly equipped sanitary establishment in the United States. The same rational and physiological principles relative to the treatment of disease are recognized at these institutions as at the Battle Creek Sanitarium, and they are conducted on the same general plan. Both medical and surgical cases are received at all of them. Each one possesses special advantages due to locality or other characteristic features.

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THIS institution is beautifully located at the head of the Napa Valley. It is a fine large building, with excellent appointments, and all facilities required for the treatment of chronic invalids of all classes. It has also a record for a large amount of successful surgical work. There are several able physicians connected with the institution. The scenery is delightful, the climate salubrious; the water supply, which is furnished by mountain springs, is pure and abundant. Hundreds of cases of diseases generally considered incurable have been successfully treated at this excellent institution during the twenty years of its existence.

CHICAGO SANITARIUM,

28 COLLEGE PLACE, CHICAGO, ILL.

THIS institution is a branch of the Battle Creek (Mich.) Sanitarium. It is favorably located near Lake Michigan, in the southern portion of the city, close to Cottage Grove avenue, and facing the old Baptist University grounds. A few patients are accommodated. Facilities are afforded for hydrotherapy, and the application of massage, electricity, Swedish movements, and other rational measures of treatment.

NEBRASKA SANITARIUM,

COLLEGE VIEW (LINCOLN), NEB.

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A. N. LOPER, M. D., Superintendent.

COLLEGE VIEW is a thriving village located in the suburbs of Lincoln, with which it is connected by an electric railway. College View is the seat of Union College, one of the leading educational institutions of the West. The Sanitarium has a beautiful location, facing the spacious college grounds, and gives its guests the advantages of a quiet, homelike place, combined with appropriate and thoroughly rational treatment. It has a full equipment of excellent nurses, and has already won for itself an enviable reputation in the West.

PORTLAND SANITARIUM,

PORTLAND, ORE.

L. J. BELKNAP, M. D., Superintendent.

THIS institution is beautifully located in the center of the city, in a fine building with spacious grounds; and although it has been in operation scarcely more than a year, it already has a good patronage, and has evidently entered upon a successful career. Facilities are provided for the dietetic and medical treatment of chronic ailments of all kinds. The advantages for treatment include, in addition to various forms of hydrotherapy, electric-light baths, and apparatus for the application of electricity in its various useful forms, manual Swedish movements and massage.

COLORADO SANITARIUM,

BOULDER, COLO.

W. H. RILEY, M. D., Superintendent.

THIS institution is located on a beautiful site of one hundred acres, including a fine mountain peak, and commanding extensive landscape views which, for variety and beauty, can hardly be equaled. The site adjoins the thriving city of Boulder, and is about one hour's ride by rail from Denver, the streets and principal buildings of which are easily discernible from the peaks around Boulder. The equipment consists of a large building especially erected for the purpose, two fine cottages, and every appliance for the application of hydrotherapy, and for the special treatment of pulmonary ailments, to be found in the best establishments of like character. Particular attention is given to the dietetic treatment of patients, and to systematic exercise, in addition to the special treatment for specific ailments. The altitude is between five and six thousand

Directory of Sanitariums.—Continued.

feet, just that which has been determined to be the best for pulmonary troubles. Though but a few months have elapsed since the work of this institution was fairly begun, a large number of persons suffering from pulmonary tuberculosis have already been cured, and are now rejoicing in sound health. The rational hygienic treatment, with the climatic advantages, has proved effective in the cure of cases which, without the combined advantages of these superior measures, must certainly have succumbed to the disease.

GUADALAJARA SANITARIUM,

STATE OF JALISCO, MEXICO.

D. T. JONES, Superintendent.

ADDIE C. JOHNSON, M. D.,
J. H. NEALL, M. D., } Physicians.

THIS institution, established in 1894, is the first and still the only one of the kind in Mexico. It affords, in addition to the unsurpassed climatic advantages of the region in which it is located, facilities for the employment of hydrotherapy, electricity, massage, manual Swedish movements, and dietetics, in the treatment of all forms of chronic disease. The altitude is the same as that of Denver,—from five to six thousand feet. Guadalajara has the advantage of a climate more nearly uniform than any other with which we are acquainted. Located in the tropics, it enjoys almost perpetual sunshine, while its altitude is such as to prevent excessive heat. There is probably no better place on earth for a pulmonary invalid. It is only necessary that the advantages of this institution should become known to secure for it extensive patronage.

INSTITUTE SANITARE,

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THIS institution affords the only place in Europe where patients can receive the advantages of a thoroughly hygienic diet, baths, electricity, Swedish movements, massage, and various other methods of treatment, applied after the manner and in accordance with the same principles which govern the Battle Creek Sanitarium and its several branches. The physicians are persons who have received a thorough training in the institution at Battle Creek. Terms are moderate. No better place for sick persons or semi-invalids abroad than the Institute Sanitare.

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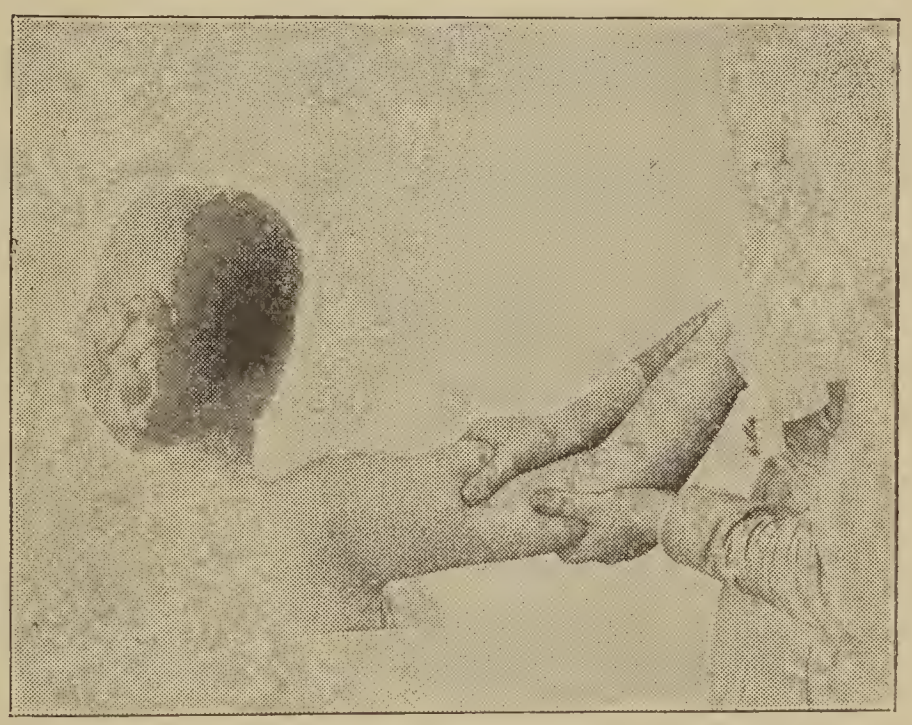
BY J. H. KELLOGG, M. D.



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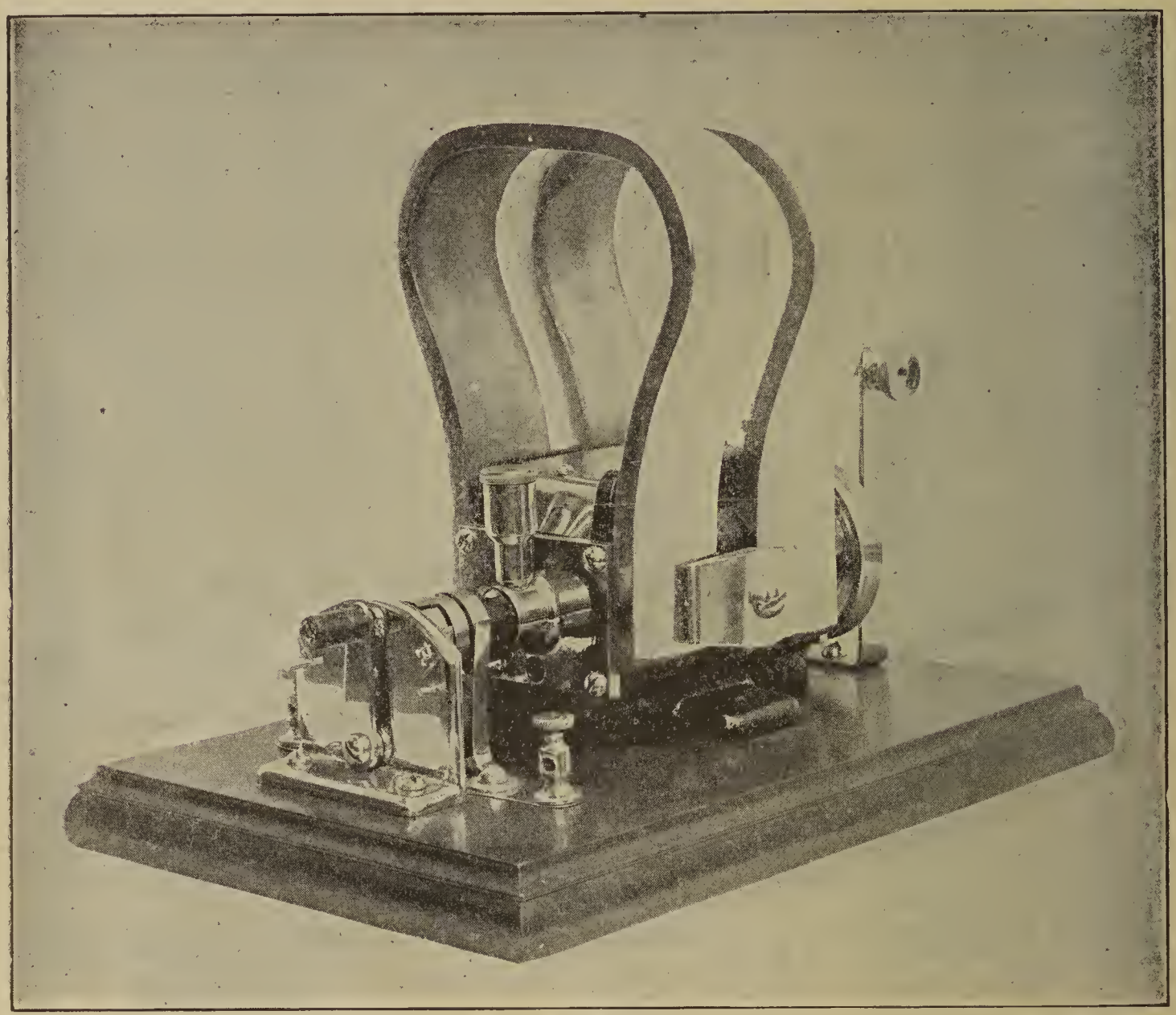

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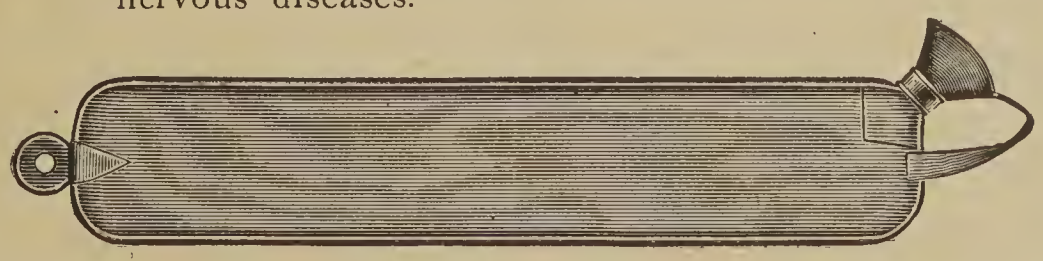

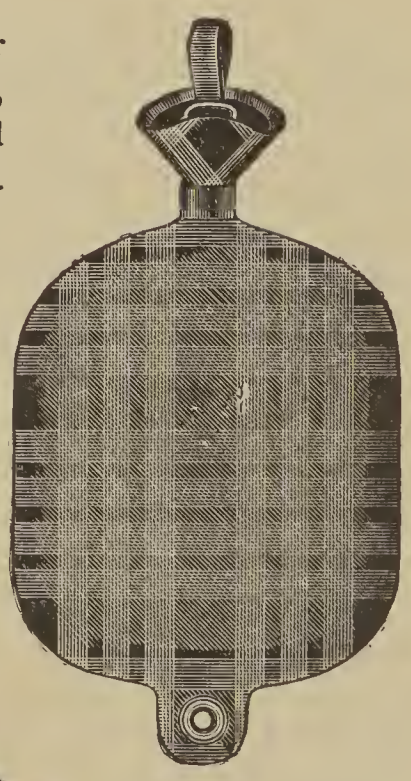

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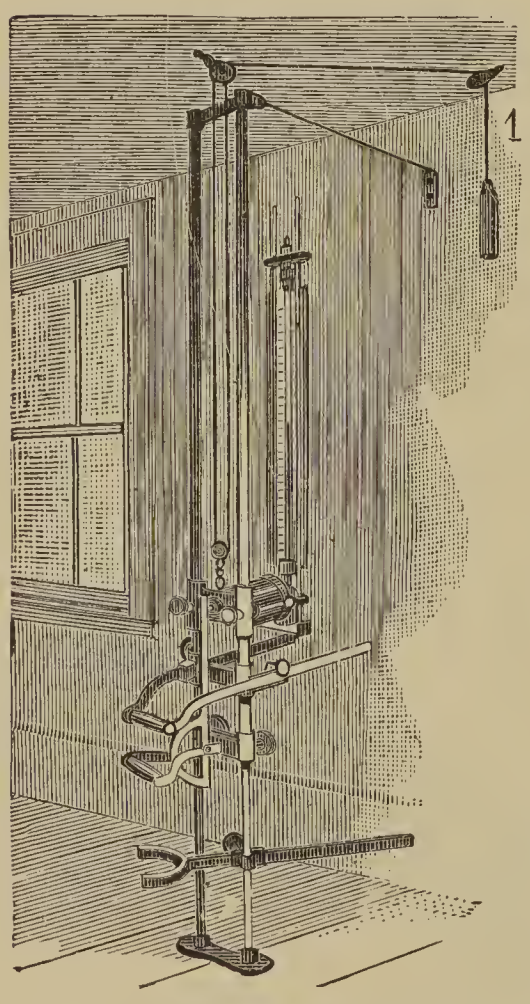

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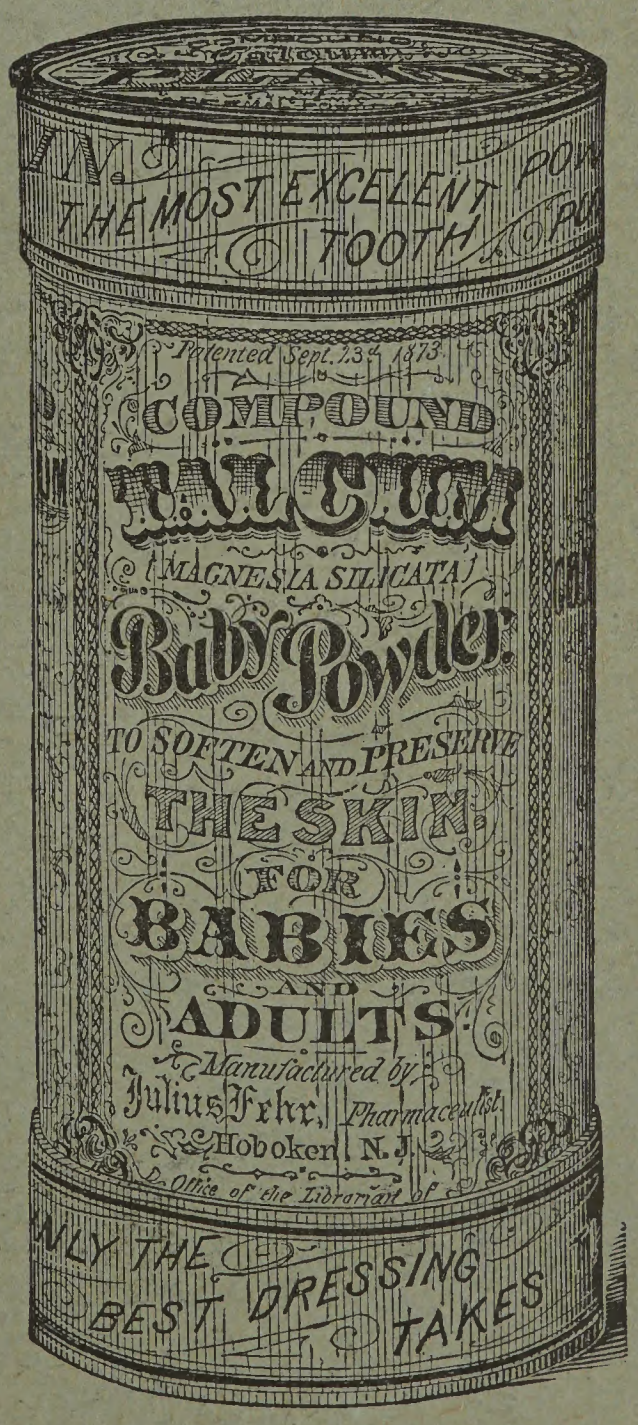

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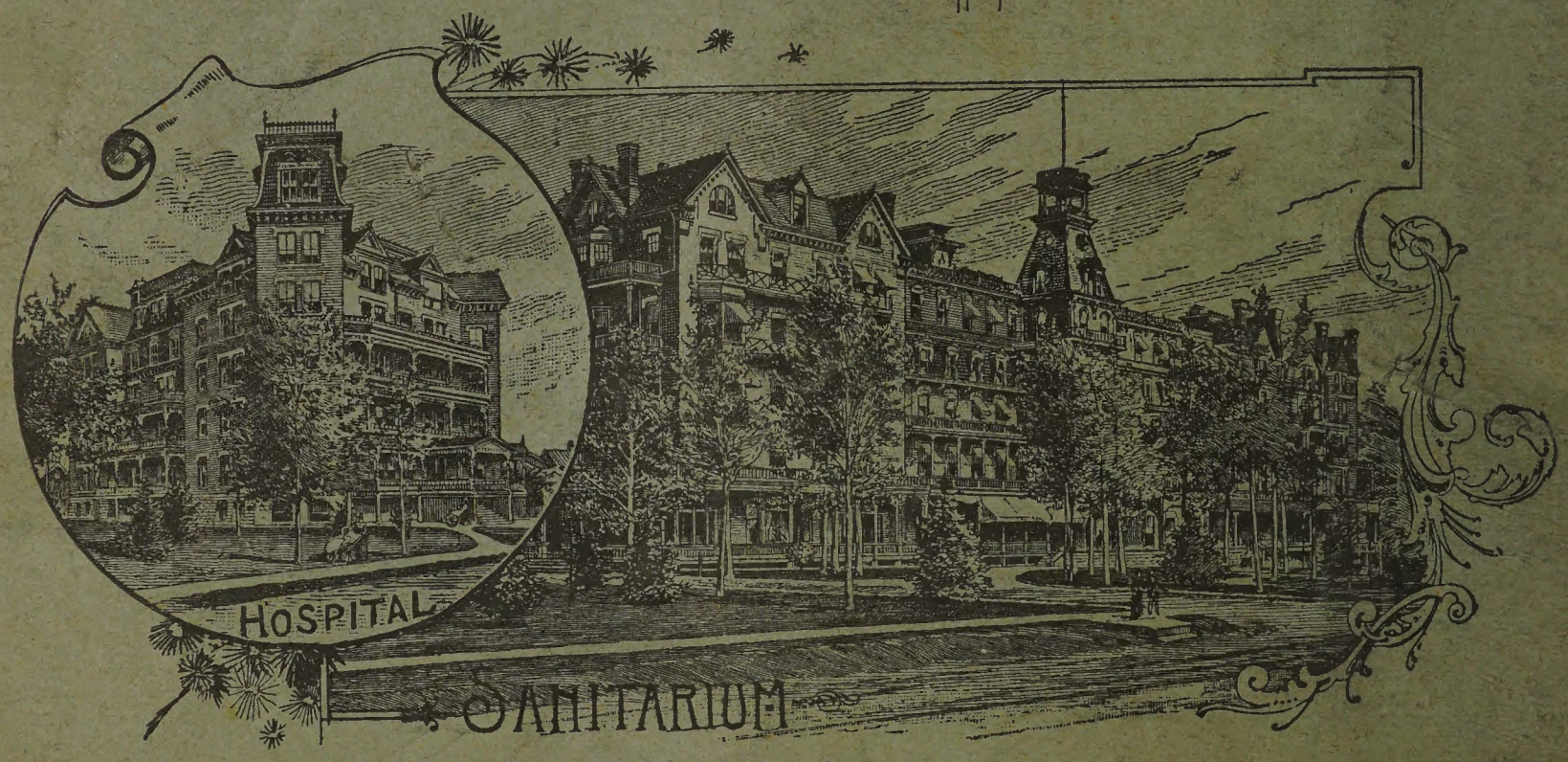

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